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VOL. XVIII NOVEMBER, 1936 No. 4

THE ITALIAN "BATTLE OF WHEAT"[1]

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Wheat is a basic commodity in the economy of Italy. It is the primary food of the people and is a staple crop throughout the country, in all regions and on every type of farm. Almost a fourth of the cultivated area is devoted to its production.

Until near the end of the last century, Italy's output of wheat was sufficient to satisfy most of its needs. Industrialization, a rapidly growing population and rising living standards, however, expanded wheat requirements. Domestic production did not keep pace, and increasing amounts had to be imported. The gap between needs and output broadened markedly during and immediately after the World War. Moreover, there was every prospect of continued rapid population growth. Italy, already dependent on other countries for basic industrial raw materials, seemed likely to become also heavily dependent on foreign sources for its most essential food.

To a large body of opinion this situation caused concern. The rising wheat imports, occurring at a time of diminished emigrant remittances and tourist expenditures, added to the difficulties arising out of Italy's unfavorable foreign trade balance. Moreover, the War had clearly revealed the seriousness of her dependence on overseas countries for coal, cotton, oil and wheat. Any power or group of powers commanding the entrances to the Mediterranean could in such circumstances control the destiny of Italy. Thus, the conviction spread that every effort must be made to develop a greater degree of economic independence, in primary food-stuffs at any rate.

[1] The present study is based on an analysis of the agricultural policy of Fascist Italy in which the author has been engaged since 1935. The aid of the Social Science Research Council in this work is gratefully acknowledged. It should be noted that the statistical data are drawn from official Italian sources and from the International Institute of Agriculture.

Initiation of the "Battle of Wheat"

More immediate factors, however, lay behind the sudden decision of the fascist government in the middle of 1925 to launch a vigorous program to raise Italian wheat output.

The wheat harvest of 1923 was exceptionally good (many observers hastened to attribute this to the "social order" and "discipline" established by the new fascist regime), but it was followed by a very poor crop in 1924. This led to heavy imports, high prices and an unfavorable trade balance of record proportions.[2] The consequent threat to the Italian currency—already inflated—aroused grave concern in ruling circles. A reduction of the import excess would be necessary if the currency were to be stabilized. But wheat was the only major import commodity that could be produced in appreciably greater quantities at home. A high duty would stimulate increased domestic production, reduce consumption and make possible a larger measure of independence of foreign supplies. A factor in the decision may also have been the benefits that the big landowners and chemical and machinery industrialists—so important in helping the fascists to power—would derive from a wheat tariff and from propaganda for increased use of fertilizer and agricultural machinery.

Considerations of a more purely political nature doubtless played a part as well. The Matteotti crisis in the second half of 1924 had severely shaken the prestige of the fascist government. An aggressive and well-publicised wheat campaign—which must make a strong sentimental appeal to all patriotic Italians—might help to restore confidence in the regime and to direct public attention away from the issues raised by the murder of the socialist deputy.

The manner in which the "Battle" was begun indicates that it was hastily decided upon, in consequence of economic and political considerations of the moment. Hopes prevailed that satisfactory results would be obtained in a short time—four or five years at most. There is little evidence that the "Battle" was originally conceived as merely the first engagement in a far-sighted campaign for the general intensification of agricultural production, a claim made by fascist publicists in more recent years.

At any rate, the goal was clear from the beginning: to make Italy independent of foreign wheat within the shortest possible time, by means of a substantial rise in home production. This

[2] See Tables 1 and 2, below.

goal might be reached by extending the area under wheat or by intensifying cultivation on the existing area. But the rational limit of wheat acreage had been overstepped already. Indeed, experts for years had been insisting that a drastic reduction of the grain areas would benefit Italian agriculture. Little in the way of a satisfactory rise in production, therefore, could be expected from acreage extension. However, in view of the conviction that much of Italy's farm land is irrationally cultivated, and that chemical fertilization, greater use of machinery and seed selection can do much to raise its level of efficiency, intensification seemed to offer a definite hope. From the first, then, the official slogan was: "Intensified cultivation, but not increased acreage!"

Methods

In the spring of 1925 the Duce sketched the main lines of the "Battle," on June 20 he announced his purpose to the Chamber, and on July 4 the first meeting of the Permanent Wheat Committee took place. Thereafter a long series of measures was adopted by the government for the direction and prosecution of the campaign. In general terms, their purpose has been (1) administration of the forces engaged in the "Battle," (2) direct stimulation of more intensive cultivation, and (3) support of domestic wheat prices.[3]

The Permanent Wheat Committee has been the central administrative organ in the campaign. Its function is to supervise the progress of the "Battle," to study means whereby wheat production may be increased, and to make recommendations to the government.[4] Local official and semi-official agencies, including provincial wheat commissions, agricultural workers' and employers' syndicates, cooperatives, and educational bodies, were entrusted with the task of administering the program in the provinces and communes.

Directly to encourage more intensive cultivation a variety of subsidy devices were developed. Most important among these were reduction of the price of gasoline used in farm machines and of railroad freight rates for chemical fertilizers; support for

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[3] For a detailed account and general critique of the campaign, see E. Müller-Einhart, *Mussolinis Getreideschlacht* (Regensburg, 1933). Other analyses: F. Vöchting, "Die italienische Getreideschlacht," *Schmollers Jahrbuch . . .*, vol. 54, no. 5, 1930; G. Salvemini, "Mussolini's Battle of Wheat," *Political Science Quarterly*, March 1931; P. Ucker, *Die italienische Agrarpolitik seit 1925* (Aarau, Switzerland, 1935). Most Italian accounts are too uncritical, too bent on slavishly praising the fascist regime, to be of value.

[4] The composition of the Committee has been changed several times. At present, it consists of the Duce as chairman, of representatives of the fascist party, the ministries of agriculture, corporations and finance, the cereals corporation, the confederations of agricultural workers and employers, the syndicate of agricultural technicians, and of a number of experts. In all, it has 24 members.

the development of farm machinery suitable to Italian conditions; aid in the distribution of selected seeds, the construction of silos, the adoption of seed-sorting machines, motor-ploughs, and other machines; subsidization of reclamation projects, building of roads, stalls, troughs, etc., on land adaptable to wheat. Technical education and research were also encouraged: added financial help was given to experiment institutes, agricultural schools and to the system of agricultural advisers; local committees were established for the operation of demonstration fields.

At the same time, propaganda weapons—wielded by newspapers, schools, churches, radios, motor caravans—were employed to foster a "wheat consciousness" in the nation. Intensive efforts were made to instil in the peasants and farmers an eagerness for victory in the "Battle." Yearly wheat-growing competitions—both national and local—were sponsored, and astonishingly high yields were obtained by the winners.[5] The government thus was able to arouse widespread interest in the progress of the "Battle," in the cities as well as in the countryside.

Quite the most important tactic in the campaign, however, has been the maintenance of Italian wheat prices above world market levels, with the effect of at once stimulating production and checking consumption. The government has continually worked to this end, chiefly by means of a high duty on imports.

In effect, the "Battle" was opened with the reintroduction on July 24, 1925 of a tariff of 7.50 gold lire per quintal of wheat.[6] Thereafter it was raised as follows: on September 12, 1928 to 11 gold lire; on May 23, 1929 to 14 gold lire; on June 4, 1930 to 16 gold lire; and finally on August 16, 1931 to 75 paper lire (roughly equivalent to 19 gold lire). Since the beginning of 1935 wheat imports have been under strict quota control. Heavy duties on wheat flour, corn and other competitive cereals and cereal products have also been imposed.

But the weakness of wheat prices after 1928-29 necessitated recourse to additional price supporting devices.[7]

In order to prevent the accumulation by millers of large stores of foreign wheat, with which downward pressure might be brought on domestic prices, compulsory mixing regulations were introduced in 1931. These require that in the milling of flour a minimum percentage of domestic wheat be mixed with the foreign

[5] In 1932 a record yield of 73 quintals per hectare was obtained on a 20 hectares field; the maximum in 1933 was 88.3 quintals per hectare on two hectares.

[6] The unpopular pre-War duty of 7.50 lire per quintal had been suspended early in 1915.

[7] The government has also undertaken to reduce costs of production, particularly by cutting wages of agricultural labor.

products.[8] Specifications for bread and other wheat products have also been defined for the purpose of discouraging consumption of fine flours (largely of foreign origin).

Characteristic of the Italian wheat market in the past was a decided seasonal price decline directly after the harvest, a consequence of immediate sale of a large proportion of the crop by producers in need of money or lacking storage facilities. To prevent these gluts and to enable the farmers to obtain a larger share of the final wheat price, adequate storage and credit facilities were necessary. This need has been met, in large measure, by

TABLE 1. PRICES OF WHEAT ON THE ITALIAN MARKETS, 1923-35

Annual unweighted averages; current lire per quintal

Crop years	Foreign Wheat (import price less duty)	Domestic Wheat	Purchasing power of domestic wheat	Crop years	Foreign Wheat (import price less duty)	Domestic Wheat	Purchasing power of domestic wheat
1923–24	102	100	100	1929–30	93	131	136
1924–25	156	163	85	1930–31	64	111	131
1925–26	163	195	126	1931–32	49	107	140
1926–27	156	172	137	1932–33	46	103	146
1927–28	110	132	137	1933–34	41	85	129
1928–29	100	131	126	1934–35	37	94	137

the development under government auspices of a system of wheat pools, credit advances and collective sales. For this purpose the construction of warehouses and silos was subsidized. Within the last year the pooling for collective sale of all market wheat has been made obligatory.

These measures, together with the controls over enterprise exerted under the corporative system, have enabled the government in recent years practically to fix wheat prices. While it has not been possible to prevent a nominal price decline since 1925-26, the gap between domestic and foreign prices has continually broadened and the purchasing power of wheat in the home market has actually risen.

Results in terms of wheat production

The immediate goal of the "Battle"—virtual self-sufficiency in wheat—has been won.

Throughout the period of the campaign the total area under wheat has tended to rise. During the five years 1931-35 it averaged about 5 million hectares, roughly 300,000 hectares above that in 1921-25.[9] Most of this increase occurred at the expense

[8] The milling regulations have been changed from time to time. The required percentage of home-grown wheat has risen as high as 99.

[9] This rise, even though relatively slight, has taken place against the express wishes of the government. Skeptical observers are inclined to believe that local officials, desiring to respect the government's wishes, frequently underestimated the acreage.

TABLE 2. ACREAGE, YIELD, PRODUCTION, AND NET IMPORTS OF WHEAT, 1909-13, 1921-35

Year	Area (millions of hectares)	Yield (quintals per hectare)	Production (millions of quintals)	Net imports[a] (millions of quintals)
1909–14 (annual av.)	4.76	10.35	49.3	14.5
1921	4.8	11.0	52.5	26.3
1922	4.7	9.5	44.0	31.4
1923	4.7	13.1	61.2	20.9
1924	4.6	10.1	46.3	25.7
1925	4.7	13.9	65.5	16.3
1926	4.92	12.2	60.1	20.9
1927	4.98	10.8	53.3	23.7
1928	4.96	12.5	62.2	23.6
1929	4.77	14.8	70.8	11.2
1930	4.82	11.9	57.2	21.9
1931	4.81	13.8	66.5	8.7
1932	4.93	15.3	75.4	3.4
1933	5.09	16.0	81.3	3.1
1934	4.97	12.8	63.4	5.1
1935	5.03	15.4	77.1	

[a] From August 1 of the year indicated to July 31 of the next year. Net imports of wheat flour, semolina, and wheat paste are included; coefficients of conversion into wheat equivalents are, respectively, .73, .65, 72.

of hillside pasture in the peninsular South, and in Sicily and Sardinia, regions in which the wheat area has always been extensive. In those regions, the average wheat area in 1931-35 was 13 per cent higher than in 1921-25. In North and Central Italy the new acreage was insignificant.

National average yields, rising already before the initiation of the "Battle," have advanced unsteadily but appreciably since 1925. The average in 1931-35 was 14.6 quintals per hectare, as compared with 12.4 in 1926-30, 11.5 in 1921-25, and 10.4 in 1909-14.[10] Here again, there are notable differences between the various regions:

TABLE 3. ANNUAL AVERAGE WHEAT YIELDS—QUINTALS PER HECTARE

Periods	North Italy	Central Italy	South Italy and Islands
1909–14	14.5	9.1	8.1
1921–25	16.5	9.9	8.9
1926–30	17.2	11.1	10.1
1931–35	21.8	13.7	10.7

Thus, yields in North and Central Italy rose about 50 per cent between 1909-14 and 1931-35, but only 32 per cent in the South.

Production in the first phase of the campaign was disappointingly low from the official point of view, averaging only 60.7 million quintals per year in 1926-30 as against 53.9 millions in 1921-25. Such increase as occurred then was probably more the result of favorable weather and acreage extension than anything

[10] Yields had been rising for at least 40 years before the War. They averaged only 8.4 quintals per hectare in 1871-75—25 per cent below those of 1909-14.

else.[11] Significant results could never have reasonably been expected in these first years; some time was necessary before the capital, technique, and labor invested during the campaign could bear fruit.

In recent years more satisfactory results have been obtained. Output in the period 1931-35 averaged 72.7 million quintals, markedly higher than ever obtained before, even in the best crop years. This increase is partly responsible for a drastic reduction of imports and a close approach to self-sufficiency. But, as will be shown below, a substantial decline in the consumption of wheat products has also been a factor in this attainment.

Thus in terms of its immediate objectives the "Battle of Wheat" has been victorious. Indeed, it is difficult to understand how, in view of the extraordinary means adopted, such an ultimate victory could ever have been in doubt. But it has been purchased at the cost of seriously unbalancing Italian agriculture and of imposing a heavy burden on the working and consuming masses.

Rationalization of Agriculture and the Problem of the South

Fascist commentators frequently present the "Wheat Battle" as symbolic of a program for the intensification of agricultural production in general. Closer examination of recent developments in Italian agriculture shows that this claim has little foundation. During the first five or six years of the campaign, at least, commodities other than wheat were relatively neglected.

Of course, the official pressure for the adoption of more rational methods of cultivation—deep ploughing, seed selection, sowing in rows, use of chemical fertilizers—has raised the technical level of wheat production. It has also had indirect effect on agricultural methods in general, at least on the commercialized farms of the North. The land tenure system and the poverty of the South, however, have not admitted noteworthy technical advances. Furthermore, the peculiarities of Southern soil and climate operate against effective application of chemical fertilizers, deep ploughing and machinery.

But continual emphasis on more and yet more wheat production, the slight attention given by the technical advisers to rota-

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[11] The influence of the weather is suggested by comparison with wheat yields (quintals per hectare) in neighboring countries:

	1925	1926	1927	1928	1929	1930	1931
Italy	13.9	12.2	10.8	12.5	14.8	11.9	13.8
France	16.0	12.0	14.2	14.6	17.0	11.6	13.8
Spain	10.2	9.1	9.0	7.8	9.8	8.9	9.0

tion, animal husbandry and general farm management, the greater purchasing power of wheat in consequence of tariff protection, tended to draw attention away from other important branches of agriculture. Tree crops and livestock probably have suffered most from the one-sidedness of the wheat policy.

Italy is by nature excellently adapted to the production of fruits, vegetables, nuts, and vines. The mild Mediterranean climate and the soil permit the growing not only of most temperate fruits and vegetables, but also of many subtropical plants. Because of the great extension of the country from north to south, it is possible to distribute vegetable harvests over most of the year. Thus, it has particular advantages as a supplier of southern fruits, wines, and early vegetables to European markets. Certainly, the export of these commodities is important. But Italy did not share in the increased world trade of predepression years as did other countries, including its closest competitor, Spain. Methods of cultivation, harvesting, packing, and transport have lagged behind, and costs of production have remained high. If anything like the attention paid to wheat had been given to these crops, no doubt substantial progress could have been made.

More serious has been the decline of the livestock industry, which has long been backward both in extent and methods. Experts have repeatedly advocated support of this industry as a policy best calculated to strengthen the country's agriculture. But since the beginning of the wheat campaign there has been a general reduction of the farm animal population—astonishingly severe in some regions. The following table presents the numbers of animals in 1918, 1926, and 1930 as percentages of those in 1908:

	Horses, asses, and mules	Cattle	Hogs	Sheep	Goats
Census of 1908	100	100	100	100	100
Census of 1918	96	100	92	105	114
Official estimate of 1926	120	120	114	111	115
Census of 1930	105	106	126	90	67

The decline has been continuing in more recent years.

The livestock reduction has not been uniform in all parts of the country. In the northern and central *compartimenti,* the number of horses, cattle, and hogs rose between 1918 and 1930, while that of goats and sheep fell. In the South and Islands, however, the decline in all groups except horses has been drastic.

Major responsibility for these unfavorable developments must

be assigned to the government's wheat policy. The heavy duties on wheat and competing grains upset the balance between the various branches of agricultural production. Italian livestock producers, laboring under high costs of grain and fodders (much higher than in the Danubian countries whence Italian animal imports chiefly originate) could not withstand the increased competition of cheaply produced foreign meats. Moreover, the wheat program made it profitable to convert natural pasture into wheat fields.[12] The higher rents of pasture land particularly damaged the sheep industry. Heavy taxes on goats (the "cows of the poor") and on meat consumption have also been a depressing factor.

Imports of live animals, butter, and wool rose markedly after 1925. Eggs, once a significant export, are now imported. Italy's dependence on foreign sources of animal products has thus increased.

It is South Italy, above all, that has borne the burden of overemphasis on wheat cultivation and neglect of other industries.

As noted above, the increase in wheat output during the course of the "Battle" has been much less marked in the South than in the North. Not only have the Southern regions remained behind in production techniques, but wide fluctuations in output from year to year have also continued.[13]

Low yields and close dependence on weather fluctuations—characteristic of wheat production in South Italy—are basically a function of natural conditions. The North, with its combination of ample rainfall and warmth during the spring and summer—that is, during the period of flowering and grain formation—is well adapted to the cultivation of wheat. On the other hand, the South has rainfall during the winter, and long, hot and dry summers, a soil poor in organic substance, and much hilly and mountainous land. That is, the physical conditions are hostile to efficient grain production.[14] The wheat monoculture practised in much of the South is, in turn, hostile to the soil, tending to reduce its productivity. It has been well said of these regions that "the wheat of today eliminates the wheat of tomorrow."

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[12] As noted above, most of the recent increases in wheat area took place at the expense of natural pasture in the South.

[13] For example, yields (in quintals per hectare) fluctuated in Apulia as follows: *1926*, 13.3; *1927*, 7.4; *1928*, 11.4; *1929*, 14.7; *1930*, 9.8. Throughout South Italy the relation between the amount of rain during the earing period and the size of the crop is close.

[14] Scarcity of moisture during the critical period of wheat development, high temperatures and intense light are natural barriers to high wheat yields. The size of wheat crops therefore depends primarily on the course of the weather, and only secondarily on methods of cultivation. However, the practical development of early ripening wheats may overcome some of these difficulties. Varieties have been produced which ripen two to three weeks before ordinary types, and so can more often escape the damage caused by hot, dry winds in the period of grain formation.

Nevertheless, nearly one half of the total wheat area of Italy is located in the South. This extensive cultivation is explained to large extent by the desire of the many small peasant farmers to produce enough wheat for their own needs, regardless of peculiarities of soil, climate, or land-elevation.

But the Southern climate is favorable to certain types of production, such as citrus fruits, vines, figs, olives, almonds, and grasses and forage plants. Furthermore, the manure of pasture animals and the soil-building clovers and beans would enrich the soil and make it ultimately more productive even in cereals. The old problem of backward techniques and low production in the Mezzogiorno would find a partial solution in the encouragement of fruit, vegetable, and nut cultivation and of animal husbandry, which are specifically suited to the natural character of the country.[15] This would call for less, not more, wheat—not an intensification of grain cultivation, but rather a reorientation of the entire southern agricultural system. The "Battle of Wheat," then, by not only maintaining but also leading to an increase of wheat acreage and a decline of livestock has made even more pronounced the one-sidedness so often deplored by students of the problem of the South.

In more recent times, these errors of the wheat program have been tacitly admitted in official quarters. The government has shown increasing concern for the livestock industry. High tariff duties on imports of animals and animal products were introduced in 1932. A national animal husbandry competition was begun in 1930 and in 1934 the annual wheat contest was transformed into a "National Wheat and Farm Competition," which is intended to encourage not only higher wheat yields, but also more rational rotation and improvements in forage crops and livestock breeding.

Tariffs, Wheat Prices, and Consumption

The fundamental measure in the campaign for increased wheat production has been the development of heavy (and finally almost prohibitive) restrictions on wheat imports. Tariff protection for wheat has been described by fascists as a compensation to the agricultural population for the burden of industrial protection. It is necessary to examine the relationships between land ownership, wheat production, and marketing in order to determine the merits of this claim.

[15] The welfare of the South would also require a removal of the tariff barriers erected in the interests of Northern capitalism, a complete reorganization of the systems of land tenure and taxation, and opportunity for emigration.

The extraordinarily large number of share-tenants and small peasant proprietors means that insofar as a wheat tariff is of help to agriculture, such help goes predominantly to the landowning class. It is only the medium-sized farmers and large landowners, after all, who have substantial supplies of wheat available for market, and who can thus profit from the price-supporting measures. Share-tenants and small-holders themselves consume the bulk of their production, and sometimes must even purchase wheat products to satisfy all their needs. Furthermore, although the métayer tenants generally have only small marketable quantities, they must share the increased expenses of wheat cultivation equally with their landlords. That is, the higher costs burden them more heavily. Thus the maldistribution of agricultural income is intensified. The capital so much needed by the poorer enterprises remains in the hands of non-operating, often absentee, owners.

Finally, the great mass of agricultural wage workers are interested in wheat essentially as consumers. For them, the tariff is only a factor in higher living costs—all the more burdensome because of the great importance of bread in their diet.[16]

The fascist defence of the wheat tariff with the assertion that it is a premium distributed among the rural masses is, then, quite false. The majority of the agricultural population has actually been penalized by the wheat tariff as well as by industrial tariffs. The great army of industrial and agricultural wage-earners—in whose food budgets bread and pastes play a major rôle—have been the cannon fodder of the "Wheat Battle." Their contribution has been unnecessarily higher living costs and reduced consumption.

In the years 1925-35 Italian consumers have paid a premium on their wheat of roughly 32 billion lire—a premium that has benefited chiefly the large and medium-sized landowners. That is, all the wheat available to consumers during this period could, in the absence of a tariff, have been bought for 69.18 billion lire; actually it cost 101.54 billions, almost 50 per cent more.[17] Also, no small part of the public funds have been spent on the campaign. According to the Ministry of Agriculture, during the four financial years 1925-26 to 1928-29, 225,570,000 lire were provided for

[16] Because of widespread unemployment and the bargaining weakness of the fascist labor organization, not only have the workers been unable to obtain a share of the tariff advantages through higher wages, but their incomes have also declined drastically during the period of the "Battle." It should be noted that increased wheat cultivation tends to raise unemployment inasmuch as it often takes the place of crops that require considerably more labor.

[17] According to Salvemini, *op. cit.*, a family of workers consisting of man and wife and three children under 12 years consume slightly less than 10 quintals (about 2200 pounds) of wheat per year. The average annual excess cost on this amount has been about 400 lire, that is, 5 to 10 per cent of the total yearly earnings of many workers.

this purpose. By the end of 1935 the total cost may easily have been as much as 500 million lire.

Furthermore, consumption of wheat declined during the years of the campaign. The average quantity annually available per capita during the crop years 1909-13 was 166.1 kilograms; 1921-25, 187 kg.; 1926-30, 182.8 kg.; 1931-35, 159.9 kg. That is, the increase in domestic production has not been sufficient to compensate for the reduced imports. Consequently consumption has fallen to levels lower than those known immediately before the World War. Thus, the price supporting measures of the campaign have made for "self sufficiency" by both raising production and diminishing consumption. Indirectly consumers have suffered, too, by reason of the relative neglect of other agricultural commodities.

Conclusion

Striking a balance, it may be said that in consequence of the wheat campaign, domestic output has been raised appreciably, and that Italy's dependence on wheat imports is much reduced. Furthermore, the prestige of the fascist régime at home and abroad undoubtedly has been enhanced. It is something to be able to point to a concrete and marked advanced in the production of wheat, a commodity easy to sentimentalize, especially in Italy. Also, profits of the landowners and the chemical and machinery industrialists have been increased. On the other hand, the cost of these achievements has been a serious disturbance of the agricultural equilibrium of the nation, possible future reduction in productivity, unnecessary loss of export markets for products more economically produced than wheat, and higher living costs for urban and rural workers.

THE NEED FOR "GENERALISTS"

Dr. A. G. Black
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In agricultural economics there has been in the past twenty years a remarkable specialization. One might say an alarming specialization. Our specialization has not been unique but merely a phenomenon duplicated in the fields of general economics, in the natural and biological sciences, in business, in medicine and dentistry, in colleges and universities and in experiment stations.

The past generation, like several generations before it, has indeed been one of greater and greater specialization. This has resulted in great advances in agricultural economics. Our specialists have developed new technics of analysis, they have discovered new relationships, they have been able to give close attention to important facts and factors that might otherwise have escaped attention and by such escape might have led to wrong conclusions. Without this specialized attention our discipline in agricultural economics could not have attained the position it has reached today.

This advance has not been attained without cost. The price has been the loss of minds, or the neglect to develop minds, trained to cope with the complex problems of today in the comprehensive, overall manner called for by such problems. Our specialists are splendidly equipped to solve a problem concerning the price of wheat, or of corn, or of cotton, or a technical question in cooperative marketing, farm management, taxation or international trade. But the more important problems almost never present themselves in those narrow terms; rather they may involve elements of all the above and perhaps several more.

The question may be broken down and parceled out to specialists for analysis, but even for this task our personnel is weak. To divide the question into its parts, someone with sufficient grasp of all of the different sub-fields of agricultural economics must be available to survey the problem, classify its sub-problems, and see that important elements do not escape scrutiny. If a specialist is given this job he is almost certain to approach the task from the standpoint of his specialty, and by so doing, is almost equally certain to make a wrong or an incomplete diagnosis. If the specialist is poorly equipped to make an initial breakdown of a complex problem, how much greater is his weakness when he attempts to bring together, to synthesize the results of special studies! In

the field of synthesis the man who has narrowly specialized is often helpless. He is inclined to overvalue the results from studies within the field of his specialty. He is more or less unable to weigh the relative importance of the sub-problems. And the greater his unfamiliarity with other fields of work the greater his inability to use properly the research results from those fields in the final solution of the main problem.

Increased specialization itself tends to raise barriers between fields. It tends to create a system of professional jealousies that is not conducive to the development of generalists. The specialist who burrows deeper and deeper into a narrower and narrower hole becomes convinced that no one who has been sapping in a neighboring tunnel can possibly know as much about the peculiar twists and turns of *his* burrow as he, himself. And he is right. He knows that he can readily confound and confuse a neighboring specialist if the latter strays from his own confines, and what is more, he will. One of the greatest joys of the specialist is to make an associate appear infantile and ridiculous on the occasions when the latter appears to be getting out of his field.

The specialist stakes out his claim and guards it as jealously as ever did a prospector of the '40s, and woe to the unwary trespasser. As the specialist knows how he looks upon intruders, he knows how he would be treated if he had the temerity to wander outside his main field. Consequently he is usually quite willing to leave outside fields to other specialists.

The development of the whole field takes on a honeycomb appearance with series upon series of well-marked and almost wholly isolated cells. These cell walls need to be broken down. There is need of men who can correlate and coordinate the specialized knowledge in the separate cells—men who can bring to bear on the larger problems the findings of the different specialists and who have sufficient perspective and sense of proportion to apply just the correct shade of emphasis to the contribution of each particular specialist.

Solutions of economic problems should commend themselves to the common sense of the intelligent layman. Too often solutions of complex problems by specialists carry with them a certain element of unreality, a certain fantastic quality that makes people hesitate to accept them. When a man looks into a slightly distorted mirror he accepts the validity of the image with some reservations. "Common sense" is not the same as popular public opinion. The latter, consisting as it so frequently does of a queer combination of logical fallacies, prejudices and biases, is often the opposite

of common sense. It is not suggested that the "intelligent layman" is the proper man to analyze the complex economic problems of today, nor is he one who can take the highly technical findings of the specialists and develop from them workable solutions.

In our organization of agricultural economics we have neglected to provide for the important function of coordinating and correlating the work of the specialists. We have either permitted the public to attempt to combine the isolated studies of different specialists, which it is wholly incapable of doing, or have given the job of synthesis to a specialist who by training is likewise incapable of doing the job.

Our system has given its greatest rewards and acknowledgments to specialists. It has seemed that the young man could advance faster professionally and receive greater monetary rewards by establishing a reputation for work in some specialized field. A man soon becomes known as a farm management man, or a marketing man or a price analyst. Indeed it has been almost impossible for a man not to specialize if he expects to progress.

There are too few men in the field today whom one thinks of as agricultural economists. This professor is a marketing man, this researcher is an expert on corn prices, and so on. What agricultural economics needs is agricultural economists!

In actual practice what correlating or coordinating is done, is done for the most part by those who have been selected for administrative posts. Such men have usually been specialists but have had to make their specialty a secondary interest, or perhaps have stopped work in it entirely when they have taken on the administrative job of heading a department. It has been tacitly assumed that once one becomes an administrative head of a research group, ipso facto he becomes qualified to coordinate and correlate the findings of his research specialists. It is forgotten that he was just such a specialist a short time before and has the same disqualifications for the job as any other specialist. Perhaps his disqualifications are even greater because his major attention is now drawn to administrative matters and he can give only secondary attention to the important generalizing function.

Our whole organization has developed on the assumption that the generalizing function is not important, that it does not require quite the ability and training of the specialist, that it can be satisfactorily done by almost anyone and that certainly there is nothing about it that demands the attention of really first class men. If generalizing be done at all, it can safely be committed to the specialist who can play with it as relaxation from the really seri-

ous and important demands of his specialty, or to the administrator who can give it all of the attention it requires between telephone calls and committee meetings.

All of this, I suppose, leads to the conclusion that in agricultural economics we need another specialist, that is a "specialist" who is a "generalist." We need to make a place for the trained economist of highest ability who will be free from administrative demands as well as free from the tyranny of specialization, who will have the job of keeping abreast of the results of the various specialists and who can spend a good deal of time in analyzing findings having a bearing upon the ultimate solution of these same problems.

Although this thesis may be given ready acceptance, the objection may be raised that no one can consciously train himself for such a position; that generalists will develop more or less spontaneously as workers show special aptitude. It should be possible to train as effectively for this work as for any other but it would doubtless mean considerable recasting of curricula in colleges and graduate schools.

In recent years progress has been made in "loosening up" the curricula. There is a tendency to break down the narrow specialization that was such a marked characteristic of many college courses, particularly in the agricultural colleges. Despite this tendency, curricula in agricultural economics have become rather highly specialized both on the undergraduate and graduate levels. There has been a multiplication of specialized courses and a trend away from the general course in agricultural economics. This development seemed logical and was required as the separate fields were developed and as results of research became available.

The tendency toward specialization has been even greater on the graduate level. The specialized approach is necessary as a larger and larger body of subject matter becomes available. Nevertheless the accumulation of factual material places increased pressure upon curricula builders and upon instructors. Instructors must now choose among vast stores of material. They cannot present it all, but the temptation is to crowd more and more informational material into courses. This is the easiest way. It gives students much information *about* problems, but it does not result in their being better able to think *through* problems. Tests of excellence come more and more to be tests of cramming ability and less and less tests of thinking ability.

If we are to develop men trained to deal effectively with the complex situation of today our colleges and graduate schools

must devote less attention to making their students walking storehouses of facts classified by specialized fields, and more attention to methods of analysis. Practice must be given, first, in the clear statement of the central problem or problems involved in given complex situations. This, in itself, is no easy task as these central problems are usually intertwined with irrelevant material. Second, facts must be marshalled in order to guide the worker toward the probable solution. Third, training must be given in distinguishing the important from the unimportant—in the knack of weighing relative degrees of importance of different phases of the same problem or of factual data when such data seem to point in different directions.

In other words, students need training in analysis and in synthesis. Today the ability to synthesize facts, research results and partial solutions into a well rounded whole, is too infrequently available.

Dr. Arthur E. Morgan has said that, "The work of the specialist is being well done. The work of the generalist . . . is not . . . If young men of ability will qualify themselves both in theory and in practice to be the coordinators of large human purposes, they will become the men of the century." Dr. Morgan doubtless is thinking of an even broader kind of "generalist" than I. He would classify any economist as a "specialist." But it would hasten the day when we can have "generalists" of the type of which Dr. Morgan is thinking if there could be developed a corps of men who are qualified to be called "generalists" in agricultural economics.

RURAL COOPERATIVE CREDIT UNIONS

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A credit union may be defined as a cooperative association of persons having a common interest, organized for the purpose of encouraging thrift, accumulating savings, and providing credit for its members. Credit Unions originated in Europe in the middle of the nineteenth century and are now found in many countries of the world. In the United States in recent years there has been a growing interest in credit unions. Forty-one states have passed laws providing for incorporation of credit unions and with the passage of the Federal Credit Union Act approved June 26, 1934, they may also be incorporated under Federal Charter. From the date of passage of the act to July 1, 1936, credit unions organized under federal charter number 1,519, and during the same period, a large number were incorporated under state laws. The total number in operation in the United States in July 1936 was estimated as 5,100 by the Credit Union National Association.

The development of credit unions in the United States has been confined largely to urban groups of wage earners. Employees of particular manufacturing plants and in other business concerns have found them helpful and a large number have been organized among such groups. Also other groups including employees in government offices and members of church parishes have organized credit unions. The number organized among groups of farmers in this country has been small and it is likely that they constitute not over 5 per cent of all credit unions.

There are a number of reasons why only a comparatively small number of strictly rural credit unions have been organized in the United States. In the first place, credit unions are usually organized to take care of small personal loans and the farmers in most sections of the country need larger loans for production purposes. Many farmers, particularly those who own their farms have a fairly large amount of their own capital in a farm business and therefore have a basis for credit from institutions like local banks. Also the amount of credit for consumptive uses is relatively less important among farmer than city workers because the farm usually provides a home and much of the food consumed by the family. In the second place, most of the rural communities have the services of local banks and other credit agencies which have built their business largely around the financing of farmers.

Since many farmers had a substantial equity in their farm business and an opportunity to use credit productively, they could borrow from these institutions and did not feel the need for a cooperative credit union. On the other hand, there are many sections of the country, for example the cotton producing states, where a large share of the farmers are croppers or tenants with limited capital on small farms who have been dependent largely upon merchants and landlords for credit and have paid high rates of interest for borrowed capital. In such regions there is a real need for a better credit system and the organization of credit unions is likely to result in improved credit facilities for farmers. In the third place, we note that relatively less work has been done in rural districts than in cities to interest people in the credit union movement. Undoubtedly this has been a factor retarding development of credit unions among farmers as compared with urban groups.

It does not follow that because cooperative credit unions have been relatively unimportant in providing credit to farmers in the past that they will remain so in the future. There is evidence in many sections of the country that farmers are taking a greater interest in the movement and we also have as evidence a number of unions which have been organized in rural communities in recent years. For the purpose of obtaining facts relative to the nature of the organization and methods of operations of credit unions serving farmers, a questionnaire was sent early in 1936 to 57 credit unions throughout the United States which were reported as doing most of their business with farmers. Reports satisfactory for analysis were obtained from twenty-five credit unions.

It is well to emphasize at this point that the 25 credit unions included in this study are not representative of all rural credit unions in the United States but they do give us a picture of the activities of such organizations. The location of the 25 credit unions by states is as follows: California 2, Georgia 2, Illinois 1, Indiana 3, Iowa 3, Michigan 2, Minnesota 5, Missouri 2, Nebraska 4, New York 1. Most of the credit unions were sponsored by farmers' organizations. Of the 25 credit unions, 11 were serving members of a farmers' cooperative marketing or purchasing association, 7 were organized to serve farmers in a county and 6 of these were sponsored by general farmers' organizations, 1 was a parish union serving members of the parish and 6 served a local community of which only 1 was sponsored by a farmers' organization. These credit unions were all comparatively new

organizations, only 3 having been organized prior to 1931 and with the exception of one which was organized under federal charter all were organized under state laws. The number of members ranged from 23 to 364 with an average of 111 members per association. The membership tends to be greater in the credit unions which have operated the longest period and practically every association reported that its membership among farmers was increasing.

Credit unions are under the direction of a board of directors elected by the members. Seven directors is the usual number of members on the board. A credit committee, composed as a rule of three members is also elected to pass upon loans. In most credit unions the members also elect a supervisory or auditing committee whose function is to review records and see that funds are properly accounted for. The treasurer is the most active official of the organization and it is his function to handle the routine work of the credit union.

Members deposit savings with their credit union or invest in its capital stock and by this means the credit union obtains the funds for loans to its members. Since one of its main functions is to make loans, the loans usually make up a large share of the assets of a credit union. Table 1 shows the amount of assets as of December 31, 1935, of each of the 25 rural credit unions included in this study. It will be noted that there was a range in total assets from $319.78 to $96,167.35 and in total loans outstanding from $155.00 to $70,953.58. The total loans for the entire group amount to 64.1 per cent of total assets. Cash on hand or in banks comprised 25.8 per cent of all assets, which means that about one-fourth of the assets were not earning. It is necessary for credit unions to maintain part of the assets in cash in order to be in a position to close loans and meet requests for withdrawal of funds but ordinarily a cash reserve of 10 to 20 per cent of total assets should be sufficient. It should be pointed out that one credit union (No. 22) had practically all its assets in cash due to the fact that it was operating in a cotton region and by the end of the year most of its loans to cotton farmers had been paid, but it maintained the assets in cash apparently to meet demands for loans in the spring. Excluding this particular credit union, we find that cash amounted to only 20.2 per cent of the total assets of 24 credit unions. The classification "Investments" includes primarily bonds held by the credit unions. The type of investments which they may make is regulated by the laws under which the associations are incorporated but they are usually limited to government

or municipal bonds. Federal credit unions may invest funds in obligations of the United States.

Members invest their savings in the credit union either by the purchase of shares or by deposits. Not all states permit deposits and no provision is made for deposits in federal credit unions. The par value of shares varies in different states but is usually $5 or $10. The par value of shares in federal credit unions is $5. Shares and deposits are the important liabilities in credit

TABLE 1. ASSETS OF 25 RURAL CREDIT UNIONS, DECEMBER 31, 1935

Number of Credit Union	Loans Outstanding	Cash	Investments	Other Assets	Total Assets
1	$ 260.00	$ 27.61		$ 32.17	$ 319.78
2	155.00	221.48		13.12	389.60
3	384.99	12.61			397.60
4	484.60	73.05		26.30	583.95
5	642.50	10.87		16.79	670.16
6	667.50	51.69		3.06	722.25
7	786.00	134.86			920.86
8	860.25	64.30			924.55
9	805.00	409.40			1,214.40
10	1,348.82	205.24		27.31	1,581.37
11	313.25	370.93	$ 61.19	1,134.17	1,879.54
12	2,303.78	46.76		41.25	2,391.79
13	2,205.00	490.31			2,695.31
14	2,870.00	108.71		10.75	2,989.46
15	2,994.77	95.21			3,089.98
16	3,642.45	71.18		150.11	3,863.74
17	2,822.02	1,310.89			4,132.91
18	4,551.43	1,328.35		91.95	5,971.73
19	6,786.53	495.30		6.04	7,287.87
20	6,444.07	5,268.25	5,250.00	4,458.02	21,420.34
21	13,978.19	231.21	8,127.59	407.37	22,744.36
22	1,781.74	23,459.00		310.00	25,550.74
23	23,064.64	5,067.41	1,715.59	15.00	29,862.64
24	70,953.58	15,896.06	6,277.18	309.63	93,436.45
25	60,973.55	29,800.65	4,500.00	893.15	96,167.35
Total	212,079.66	85,251.33	25,931.55	7,946.19	331,208.73
Average	8,483.18	3,410.05	1,037.26	317.84	13,248.33
Average per cent individual assets are of total	64.1	25.8	7.8	2.3	100.0

unions as shown in Table 2 which gives the liabilities of the 25 rural credit unions as of December 31, 1935. For the entire group 53.8 per cent of the total liabilities were shares and 36.5 per cent were deposits of the members. Shares averaged $7,134.33 and deposits $4,839.73 per association. Credit unions are required to set aside a portion of their net earnings, in most states 20 per cent, for the purpose of accumulating a reserve against losses on loans. Such reserves amount to 6.4 per cent of total liabilities and averaged $851.76 per association. After setting aside this reserve the credit union may declare a dividend on shares. Part of the earnings are usually carried as surplus. It is difficult to make loans without occasionally taking some loss and a reserve against losses is essential for successful operation. Building up

a surplus also may be advisable as it strengthens the financial position of a credit union.

It will be observed from Tables 1 and 2 that many of the rural credit unions are associations of very limited resources and the amount of credit which such associations can grant to farmers is small. However, credit unions start as small organizations and usually develop slowly partly because the members and management have much to learn. It appears that most of the credit

TABLE 2. LIABILITIES OF 25 RURAL CREDIT UNIONS, DECEMBER 31, 1935

Number of credit union	Amount of shares	Amount of deposits	Amount of reserves	Earnings undivided	Other Liabilities	Total Liabilities
1	$ 285.90	$ 19.71	$ 14.17			$ 319.78
2	265.00	109.52	4.75	$ 10.33		389.60
3	351.66	25.36	10.30	10.28		397.60
4	500.36	10.30	33.55	39.74		583.95
5	304.70	335.00	13.03	17.43		670.16
6	714.50		7.75			722.25
7	782.05		1.95	36.86	$ 100.00	920.86
8	906.55		16.03	1.97		924.55
9	536.66	645.56	32.18			1,214.40
10	767.31	768.05	27.31	18.70		1,581.37
11	1,814.85			64.69		1,879.54
12	2,305.40		35.75	50.64		2,391.79
13	739.15	1,885.79	46.38	23.99		2,695.31
14	2,730.35		100.06	159.05		2,989.46
15	460.00	2,419.50	157.97	52.51		3,089.98
16	2,968.17		150.11	225.35	520.11	3,863.74
17	2,075.00	2,009.11	21.77	27.03		4,132.91
18	5,545.00		91.95	334.78		5,971.73
19	6,821.47	.69	252.14	160.63	52.94	7,287.87
20	21,292.58			127.76		21,420.34
21	4,416.78	17,123.62	535.76	668.20		22,744.36
22	1,500.57	23,767.25	64.43	149.44	69.05	25,550.74
23	27,132.45		793.03	1,224.07	713.09	29,862.64
24	73,170.00		16,826.96	3,439.49		93,436.45
25	19,971.89	71,873.92	2,056.70	2,185.69	79.15	96,167.35
Total	178,358.35	120,993.38	21,294.03	9,028.63	1,534.34	331,208.73
Average	7,134.33	4,839.73	851.76	361.14	61.37	13,248.33
Average per cent individual liabilities are of total	53.8	36.5	6.4	2.8	0.5	100.0

unions are growing and in time if supported by a sufficient number of members will have resources of the amount necessary to make them important credit agencies for the farmers in their respective communities. The theory of the credit union is that it should be composed of a group of thrifty people who can and will save part of their income. Occasionally these members will borrow and their loans are to be paid by regular savings. If farmers will set aside regularly part of their earnings and purchase shares or make deposits in their credit union, in time the assets should reach a point where the association will be an important factor in short term credit for the farmers of the community. Several rural credit unions already have reached this point.

The credit service which a credit union renders its members depends upon the purpose, the amount and the terms of the loans. The rural credit unions included in this study were asked to report the total amount of loans to farmers in 1935 and estimate the total amount loaned for certain purposes. Complete reports on loans were obtained from 21 of the 25 credit unions and the amounts according to purpose are listed in Table 3 for each association. Credit unions make short term loans for provident and

TABLE 3. PURPOSE OF LOANS TO FARMERS IN 1935 BY 25 RURAL CREDIT UNIONS

Number of credit union	Family living expenses	Debts, interest, taxes	Farm supplies	Other purposes	Total loans to farmers
1	No Report				
2		$ 86.00	$ 175.00	$ 200.00	$ 461.00
3	$ 86.00	350.00	290.00	68.00	794.00
4	100.00	100.00	200.00	84.60	484.60
5		212.00	213.00		425.00
6		365.00	175.00		540.00
7	45.00	200.00	650.00	201.00	1,096.00
8	168.36	533.14	533.14	168.36	1,403.00
9		1,040.00	1,040.00		2,080.00
10		1,600.00	1,600.00		3,200.00
11		100.00	100.00	25.00	225.00
12	No Report				
13	246.70	246.70	740.00	1,233.50	2,466.90
14		1,000.00	1,795.00		2,795.00
15		116.00	230.00	115.00	461.00
16	840.00	2,520.00	4,200.00	840.00	8,400.00
17			100.00	700.00	800.00
18	1,931.20	1,931.20	4,828.00	965.60	9,656.00
19		1,500.00	7,500.00	369.00	9,369.00
20		2,000.00	2,000.00	4,000.00	8,000.00
21	No Report				
22	2,500.00		6,000.00	1,000.00	9,500.00
23	2,306.64	6,919.92	11,532.00	2,306.64	23,065.20
24	5,000.00	10,000.00	5,000.00	1,000.00	21,000.00
25	No Report				
Total	13,223.90	30,819.96	48,901.14	13,276.70	106,221.70
Average	629.70	1,467.61	2,328.63	632.22	5,058.16
Average per cent distribution according to purpose	12.4	29.1	46.0	12.5	100.0

productive purposes. In cities most of the loans are for provident purposes, the funds being used for consumption or for payment of debts incurred for such purposes. In rural credit unions on the other hand, loans for production constitute a larger proportion of total loans. This is indicated by the fact that for the credit unions in this study 12.4 per cent of the loans were to pay family expenses, 29.11 per cent to pay debts, interest, and taxes, 46 per cent for purchase of farm supplies including feed, seed, fertilizer, etc., and 12.5 per cent for other purposes. That nearly one-half of the loans were for purchase of supplies is explained in part by the fact that several of the credit unions were organized by farmers' cooperative associations handling farm supplies and

the farmers borrowed from the credit union to pay his association for supplies purchased.

The amount of loans to farmers in 1935 by individual credit unions varied from $225 to $23,065 with an average of $5,058 per association. Obviously many were so small as to be of but little significance as a farmers' credit agency, but others made loans of sufficient amount to be an important factor in credit to farmers of a particular community. On the whole, the average loan to farmers by a credit union is small, but it varies among the associations, being dependent upon the resources of the credit union, the purpose of loans and loan policies in effect. Credit unions with limited resources usually prefer to make small loans to a larger number of members than large loans to a smaller number. It was possible to compute the average size of loans to farmers in 1935 in 23 of the credit unions and classify them according to average size of loans. This classification is as follows:

Average amount of loan	Number of credit unions
$ 1–$ 50	7
51– 100	7
101– 150	5
151– 200	2
201 and over	2

Credit unions usually fix a maximum loan per member, and in reply to the inquiry on maximum loans, 10 reported their maximum $250 or less, 8 had a maximum between $250 and $500 and 4 reported maximum loans above $500. It is apparent from the size of loans that on the whole credit unions extend credit in only comparatively small amounts to individual farmers for productive or consumptive purposes. That average loans are far below maximum loans permitted is indicated by the fact that in 60 per cent of the credit unions reporting, the average loan per farmer member was 30 per cent or less of the maximum loan established by the association.

Reports on interest rates charged by credit unions were not sufficiently complete to permit a detailed study of the actual rates charged. Rates reported were given either on a per annum or a monthly basis and one per cent per month on unpaid balances or the equivalent of 12 per cent per annum seems to be the most common rate. Thus, 9 of the 25 unions reported a 12 per cent rate and others ranged from that rate down to 6 per cent. The information available on interest rates shows that some credit unions are charging higher rates than ordinarily charged by local banks but in some cases the rates seem to be equal to or possibly lower than local bank rates. It should be emphasized

here, however, that many members of rural credit unions do not have the security to enable them to borrow from agencies like banks and production credit associations which offer favorable rates but are dependent upon merchant credit and other expensive sources of credit. In some localities even farmers have turned to loan sharks for credit and paid exorbitant rates. Such individuals if they are good moral risks can be aided greatly by credit from cooperative credit unions.

While interest rates seem to be set somewhat arbitrarily they are determined primarily by the margin needed by the credit union for expenses and reserves after payment of dividends on shares or interest on deposits. The maximum rate is usually limited by the laws under which the association is incorporated and in the case of federal credit unions it is 1 per cent per month on unpaid balances inclusive of all charges incidental to making of the loan. Of the 25 rural credit unions 9 reported that no dividends were paid in 1935 but these were unions that had been organized recently or older unions with small resources. The remainder reported dividends from 1 to 6 per cent of which 9 paid either 4½ or 5 per cent. Expenses are low in the credit unions because the directors and officers usually serve without pay and attempts are made to hold expenses for clerical help and other items at a minimum.

The preceding discussion has been an attempt to outline the nature of the operations of rural credit unions, and what follows is an attempt to point out the place which credit unions may fill in our agricultural economy.

Credit unions hold a supplementary position with respect to most other credit agencies granting short term credit to farmers. They may provide credit to persons which other legitimate agencies can not assist and for purposes for which such agencies ordinarily would not make loans. Production credit associations, for example, are cooperative associations organized to provide production loans to farmers, but these associations make no loans for less than $50, limit their loans to agricultural purposes, and insist on adequate specific security for the loan. There are, in some localities, small farm operators who need only small loans which could be handled to advantage by a credit union. Also we find many farm operators who may not have the security necessary for loans from production credit associations but who are good moral risks and operate their farms in an intelligent manner, and such operators should be satisfactory risks for loans from credit unions where they will be under close supervision

of the officers of a local credit union. Similarly, credit unions are not restricted as to purpose of loans and can make loans for consumptive purposes. Such loans involve greater risks than production loans but by close supervision, and by charging rates to offset in part at least the greater risk, they can be handled as experience has proven, with very little loss to credit unions. What has been said above with reference to the relation of credit unions to production credit associations also applies to a large extent to relations to local banks extending credit to farmers. On the other hand the credit union stands in the position of a direct competitor of the loan shark and other usurious money lenders, because it attempts to refinance and free victims of such lenders.

Credit unions appear to have a place as institutions for encouraging thrift among farmers. Income on most farms is uncertain and may vary greatly from year to year due to differences in yields and prices of products. In years of favorable income preparation needs to be made by paying debts or building reserves to enable the farmer to carry on during years of low income. A local credit union by encouraging farmer members to save a portion of their income and invest in the shares of the credit union will provide a fund which members can draw upon in times of emergency. Officers of the credit union assume the important responsibility of maintaining this fund in sound liquid loans to members or in sound securities thereby keeping it available at all times for useful purposes in the community. Undoubtedly there are many farmers even among low income groups who, under the encouragement of a credit union, could save a part of their income and such savings could be made the basis for economic progress for themselves and improved conditions for their community.

Closely related to the function of encouraging thrift is the function of education and as a cooperative organization of farmers, a credit union has real possibilities for carrying on education work in proper use of credit and in sound business practice on farms and in farmers' organizations. The theory of the credit union is that it should be organized among a group having common interests and common problems. If so organized it becomes a nucleus around which farmers can build discussions for consideration of economic and social problems. Through education the rural credit union may perform the very valuable service of making the farmer realize his responsibilities as a borrower and thereby improve his credit position.

Farmers use a large amount of credit from merchants and such

credit is usually expensive. Installment buying of consumers' goods by farmers is very common and for such credit farmers pay a high rate of interest. By postponing the purchase of articles ordinarily purchased on installment until cash can be paid or until a loan can be obtained from a credit agency at a favorable rate of interest, the farmer will avoid costly installment borrowing. Many farmers, for example the tenants in the South, are to a great extent dependent upon merchants for credit in the purchase of supplies used on the farm or in the home. If such farmers, although it might involve considerable sacrifice on their part, could systematically make small savings and pool the same into a fund in a credit union, capital would soon be available which would permit them to borrow from their credit union on short term loans and pay cash for supplies, thereby making material saving. Such practice would also make it possible for farmers to organize for cooperative purchase of supplies and it is likely that one of the important places for the credit union in agriculture is as an agency to facilitate cooperative buying. Several rural credit unions now in operation were organized by cooperative purchasing associations and instead of the purchasing association extending credit, it is extended by a cooperative credit union. Cooperative purchasing associations are organized to sell supplies, not credit, and it is advantageous to have the credit granted by agencies organized for the purpose of making loans to farmers.

While it appears that credit unions can be of aid to farmers, there are, however, certain limitations to development of rural credit unions. There must be an economic need for the credit union and in some rural communities where the present credit facilities may operate effectively as a place for savings and as a source of credit at favorable terms, a credit union probably could make no improvement in facilities except perhaps to improve the means for educational work among farmers. Another limitation is the limited resources of a rural credit union particularly during its early days. Since credit unions obtain their funds for loans from savings of their members, and furthermore since they are likely to benefit, and therefore interest particularly farmers of limited means, it may take a fairly long time before a credit union can be an important factor in short term loans to farmers in its community. Meanwhile it must be carried by members who are willing to work hard in its interest and give unselfishly of their time. Without such support from its members it may fail. On the other hand it must be recognized that there are many rural communities without local banking services where

a credit union would be of real value and also that by nature credit unions must have a small beginning and gradually grow into associations of larger resources as their management becomes more effective and as more members throw their support to them.

In conclusion, we should note that the application of the credit union idea to rural conditions in the United States is very definitely in the experimental stage. It will be advisable to follow closely the operations of rural credit unions for the purpose of determining specifically the aid which these associations can give toward increased welfare among farmers. While conditions in European agriculture differ greatly from American conditions, nevertheless further study of the cooperative credit unions in Europe where they have developed to a great extent as rural credit unions, will be helpful. To the extent that rural credit unions result in greater thrift and more constructive use of credit among farmers they will aid in establishing a more prosperous agriculture.

OUR FARM CREDIT SYSTEM[1]

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A little more than three years have elapsed since the Farm Credit Administration began to function actively under the agricultural credit legislation of 1933—the Emergency Farm Mortgage Act of 1933, approved May 12, and the Farm Credit Act of 1933, approved June 16.[2] These three years have witnessed the refinancing of more than two billion dollars of farm indebtedness through federal land bank and Land Bank Commissioner loans, the establishment upon a permanent basis of the production credit institutions and banks for cooperatives, and the placing in liquidation of the non-permanent institutions. This study will outline briefly the major features of new farm credit legislation, summarize the progress made in emergency mortgage refinancing, discuss the operations of the new production credit institutions and banks for cooperatives, and consider some of the problems confronted by the Farm Credit Administration in developing a well-rounded farm credit system on a permanent basis.

I. Legislation of 1934-1936

The principal farm credit acts passed by Congress in 1934-1936 are (1) The Federal Farm Mortgage Corporation Act approved January 31, 1934, and (2) The Farm Credits Act of 1935 approved June 3, 1935. An amendment approved June 25, 1936, continued the 3½ per cent interest rate on land bank loans to June 30, 1937. In addition, the Federal Credit Union Act, approved June 26, 1934, authorized the organization of federal credit unions under the supervision of the Farm Credit Administration. A special credit union section of the Farm Credit Administration has been created, but since the credit unions are not essentially agricultural credit agencies, their activities will not be described in this paper.

A. The Federal Farm Mortgage Corporation Act January 31, 1934

Sources of Funds for Refinancing Operations in 1933: For the purpose of refinancing outstanding mortgages the Emergency

[1] This paper was prepared in connection with a larger study assisted by a grant-in-aid from the Social Science Research Council.

[2] For the analysis of these laws see Preston, Howard H., and Bennett, Victor W., Agricultural Credit Legislation of 1933, *The Journal of Political Economy*, February 1934.

Farm Mortgage Act of May 12, 1933, provided for a special issue of $2,000,000,000 of federal land bank bonds, the interest upon which was guaranteed by the Government. It was contemplated that these bonds would be exchanged for distressed mortgages in the same manner as Home Owner's Loan Corporation bonds have been traded for home mortgages. Inasmuch as the market for bonds during 1933 was not such that 4 per cent bonds could be sold for par, it was deemed unwise to make a public offering or to undertake to exchange bonds for mortgages. Consequently at the outset the federal land banks used funds borrowed from the Reconstruction Finance Corporation supplemented by $90,000,000 on hand in the federal land banks, by sale of bonds to the production credit corporations, and by $168,400,000 deposited with the federal land banks by the United States Treasury in 1933 and 1934. Cash was paid to the creditors of the farmer whose debts were refinanced.

The Federal Farm Mortgage Corporation: In order to place the refinancing program on an independent basis a Federal Farm Mortgage Corporation was created with capital of $200,000,000 owned by the United States Government. The Corporation was authorized to issue and have outstanding at any one time an aggregate of $2,000,000,000 of bonds. These bonds are guaranteed principal and interest by the United States Government. Bonds might be sold for cash or traded to the federal land banks for their own consolidated bonds. When the latter practice was followed the land banks used the Corporation's bonds to disburse the loan proceeds to creditors whose loans were refinanced by the federal land banks. They were also issued to farmers and their creditors in connection with the financing of Land Bank Commissioner loans. In August, 1935, the practice of exchanging bonds was discontinued; loans made since that time have been paid in cash.

Increase of the Commissioner Fund: The Act of January 31, 1934 also increased the total amount of the Commissioner's fund from $200,000,000 to $800,000,000, and the maximum loan which might be granted to any borrower from this fund from $5,000 to $7,500.

B. The Farm Credit Act of 1935

The Farm Credit Act of 1935 was sponsored by the Farm Credit Administration and many of its provisions are intended merely to clarify the existing law and simplify procedure. Changes of a more fundamental nature only are described in the subsequent paragraphs.

Commissioner Loans: The time during which the Commissioner may make loans was extended four years to February 1, 1940. The total authorized amount of Commissioner loans, originally $200,000,000 had been increased in January, 1934, to $800,000,000. The 1935 Act empowered the Commissioner to use "as much as may be necessary of the assets of the Corporation" (Federal Farm Mortgage Corporation) for this purpose.

The purposes for which Commissioner loans may be made were broadened to permit funds to be used for the purchasing of farms. Loans secured entirely by real estate may now be made for periods up to forty years. These features of the law will enable prospective purchasers of farms to obtain until 1940 loans up to 75 per cent of the value of the property, whereas land bank loans are limited to 50 per cent of the value of the land and 20 per cent of the improvements. Title II of the National Housing Act authorized 80 per cent loans to urban home owners. Farm home owners now have substantially the same liberal terms under the Farm Credit Act.

Reduction of Interest on Federal Land Bank Loans: The rate of interest on all loans outstanding May 12, 1933, and all loans made through national farm loan associations since that date, was reduced to 3½ per cent for one year beginning July 1, 1935, and to 4 per cent for the two subsequent years. The 3½ per cent rate was continued to June 30, 1937 by an amendment approved June 25, 1936. The federal land banks are being reimbursed by the Secretary of the Treasury for the losses occasioned by interest reductions. The right to defer payments of principal, until July 11, 1938, on loans in good standing was extended to all loans outstanding on the date of the amendment (June 3, 1935); this right had previously applied only to loans made prior to May 12, 1933.

Intermediate Credit Banks: The intermediate credit banks were authorized to discount for or make loans to the banks for cooperatives. The intermediate credit banks were formerly limited to a discount rate not more than one per cent above the rate of interest borne by the last preceding issue of debentures. The amendment removed this restriction and, subject to the approval of the Intermediate Credit Commissioner and the Governor, the spread may now exceed one per cent.

Amendments Affecting Banks for Cooperatives: The banks for cooperatives were formerly limited in making facility loans to 60 per cent of the value of the facilities financed by the loan. If a cooperative association, for instance, desired to build a $100,000 warehouse, the maximum loan it could obtain for this

purpose was $60,000 regardless of other real property owned by the Association. The amendment permitted the bank to make loans up to 60 per cent of the appraised value of the entire security offered. Loans were formerly limited to facilities to be used for marketing purposes, but may now be made to enable cooperatives to acquire physical facilities for furnishing supplies to their members or for other legitimate purposes.

The minimum rate of interest charged by a bank for cooperatives was previously fixed at 3 per cent. This limitation was removed. This enables the banks for cooperatives to make loans on commodities in storage or transit at the rate charged by the intermediate credit banks on the same class of loans which at present is two per cent. It was contemplated that the intermediate credit banks would gradually relinquish this class of business to the banks for cooperatives.

Banks for cooperatives, including the Central Bank for Cooperatives, are permitted to discount commodity loans with the intermediate credit banks and borrow from them on the collateral security of such loans. As a further step in the direction of encouraging commodity loans by the banks for cooperatives, the borrowing cooperative association is required to purchase only such amount of stock in the bank as may be prescribed by the Governor. The requirement that $100 of stock must be owned for each $2,000 or fraction thereof borrowed still applies to other loans. Borrowers are no longer required to retire their stock when the loan is repaid; it has been found by experience that many cooperative associations desire to keep their stock in order to retain their connection with the bank.

II. Emergency Mortgage Refinancing

The major task of the federal land banks during 1933 and 1934 was to refinance existing farm mortgage indebtedness. Loans made by federal land banks continued to be made on the same basis as before the emergency. Commissioner loans on the other hand may be made up to 75 per cent of the appraised value of the property offered as security. Personal property as well as real estate may be included; either first or second mortgages are acceptable.

Commissioner loans are made with what are essentially Government funds but the land banks have had the responsibility for making the loans. This has made possible a closely coordinated refinancing program and has conserved the limited funds available for Commissioner loans. A single application form is used for both land bank and Commissioner loans; the same ap-

praisal takes care of both classes of loans. Frequently the land bank makes a loan for the maximum amount permitted by law and at the same time a supplementary loan is made from the Commissioner's fund.

From the passage of the Emergency Farm Mortgage Act through July 31, 1936, the total volume of farm mortgage loans made was $2,079,908,933 of which $1,205,988,351 were federal land bank loans and $873,920,582 were Commissioner loans. The Farm Credit Administration estimated that of the loans closed December 31, 1935, 88.8 per cent were to refinance existing indebtedness, including taxes. Of the remaining 11.2 per cent, four per cent was used to purchase the necessary stock in national farm loan associations or land banks and to cover loan fees, four per cent was for the purchase of land and redemption from foreclosure, and 3.2 per cent was for general agricultural purposes including buildings and improvements.

While the primary purpose of the farm debt refinancing program was to help the farmers, the funds made available have been of real benefit to the farmers' creditors. In 1933 and 1934 commercial banks received directly more than $368,405,000 of the loan proceeds; insurance companies received approximately $203,447,000; and the payment of taxes accounted for an additional $45,000,000.

Debtors have benefited by the refinancing program in three ways: (1) reduction of excessive indebtedness; (2) extension and deferment of principal payments; and (3) reduction in interest rates.

In this refinancing program Commissioner loans have played a much more significant role than their amount indicates. Approximately 75 per cent of the amount loaned by the land banks has been in joint loans. These loans are all made on the same high standards as before the emergency so that land bank bonds now sell to the investing public upon very favorable terms without any government support other than the subscription made to the capital of the land banks. Without the Commissioner's fund the land banks could not have refinanced a significant volume of distressed loans. On the other hand to have provided direct relief entirely by Treasury loans would have required huge sums and would have put the Government in the farm mortgage business on a large scale for an indefinite period.

The emergency phase of the financing program has largely passed. Applications which were being received at the rate of approximately 75,000 per month in the autumn of 1933 had declined to about 10,000 early in 1935, and remained fairly stable at

that level. While pressure for relief was greatest in 1933, the flood of loan applications received at the outset could not be closed immediately so that the peak of loans made was reached in the early months of 1934.

III. Short Term and Intermediate Credit

Production Credit Institutions: In the past three years the production credit institutions authorized by the Farm Credit Act of 1933 have been organized and certain matters of policy have been at least tentatively determined. One of the first questions confronting the organizers was the number of local associations which should be established and the area to be included under the jurisdiction of a single association. It is regarded as essential that each production credit association have an established place of business, a competent manager and an adequate staff. The volume of business necessary to support such an organization cannot be expected in the trade area of the average country town or even in a single county. Conscious of the danger of creating a number of uneconomic units the officers of the production credit corporations have proceeded cautiously in the establishment of local associations. Six hundred seventy-four local associations had been organized by the end of 1934 but as a result of reorganizations and consolidations only five hundred ninety-seven associations remained in operation on December 31, 1935. It is quite likely that there will be still further adjustments made in the number and territorial boundaries of the associations.

The considerations in favor of limiting the number of associations are formidable but on the other hand, if the territory to be served is too great, the more distant farmers will find it so inconvenient to deal with the association that they will only turn to it when credit is not obtainable on a satisfactory basis elsewhere. One method which is being used to solve this problem is to appoint local agents in distant communities, some of whom are located one hundred miles or more from the association office.

Banks for Cooperatives: Originally it was contemplated that the banks for cooperatives would make two classes of loans—ten to twenty year loans for the acquisition by purchase or lease of physical facilities, and "effective merchandising loans." The Farm Credit Act of 1935 enlarged the scope and modified somewhat the operations of the banks for cooperatives. Instead of "effective merchandising loans" the banks now recognize "operating capital loans" and "commodity loans"; physical facility loans are also made as previously. The operating loans are ordinarily short-term loans to be used in preparing the product

for market—purchasing boxes, cans and supplies required by the association. There is no fixed period for these loans and they may be secured to the satisfaction of the lending bank; a mortgage may even be taken secured by a fixed asset. When the product has reached the stage where warehouse receipts may be issued against it, the operating loan may be converted into a commodity loan. This enables the cooperative to make advances to its members pending the sale of the product.

Formerly the federal intermediate credit banks made most of the commodity loans and the law still allows them to do so. It is contemplated, however, that all loans to cooperative associations shall be made by the banks for cooperatives. To enable them to do so on terms as favorable as those of the federal intermediate credit banks the law lowered the minimum interest rate to that charged by the intermediate credit banks on the same class of loans.

Thus far the banks for cooperatives have made loans only from their own capital resources. The law originally gave the central bank the right to issue and sell debentures and the district banks the right to rediscount with it. The 1935 amendments authorized the banks for cooperatives to rediscount their paper with the federal intermediate credit bank. The central bank for cooperatives was not denied the privilege of selling debentures, but it is expected that in connection with loans to cooperatives the federal intermediate credit banks will hereafter be primarily rediscount corporations and the banks for cooperatives will be the service organizations.

Federal Intermediate Credit Banks: The authorized capital of the federal intermediate credit banks was originally $60,000.000, of which only $32.000,000 had been paid in on December 31, 1932. The remaining $28,000.000 was called by the banks from the Treasury in 1933, and the Federal Farm Mortgage Corporation Act authorized an increase in the capital and paid-in surplus of an additional $40,000,000. Shortly after the passage of the Act, the entire amount was subscribed and paid in, making the total paid-in capital and surplus $100,000,000. Loans and discounts outstanding July 31, 1936 amounted to $199.284,373. Their strong financial position has enabled the banks to take full advantage of the prevailing easy money conditions. Intermediate credit bank debentures have sold at an effective rate of less than one per cent. This has made possible a lowering of the discount rate to the present level of two per cent.

As a result of the change in policy instituted by the Farm Credit Act of 1935 the intermediate credit banks have practically

ceased making direct loans to cooperatives. The total amount outstanding on July 31, 1936 was $225,459 as contrasted with $33,969,171 at the end of 1934. The advances made by the banks for cooperatives increased from $27,850,593 at the end of 1934 to $50,013,329 on December 31, 1935. The loans and discounts of the intermediate credit banks to the production credit associations have increased during the past two years, amounting to $96,659,882 out of a total of $153,927,911 loans and discounts outstanding December 31, 1935. In the latter part of 1933 and the early months of 1934 the Regional Agricultural Credit Corporations were the largest borrowers from the intermediate credit banks. By October, 1935 all of these advances had been repaid. Discounts for other financing institutions have remained practically stable.

IV. Some Problems of Administration

Reorganization of National Farm Loan Associations: Under the pressure of the emergency mortgage refinancing the land banks found it necessary to assume almost full responsibility for all loans, including those made through national farm loan associations. Wholesale foreclosures had impaired or wiped out the capital of large numbers of national farm loan associations, making it necessary to legalize direct loans to farmers by the federal land banks. If the system in the future is to follow the pattern devised in 1916, the land banks must shift initial responsibility for loans back to the local associations. Only in this way can the cooperative feature be preserved. But experience has shown that a great many existing associations are not capable of assuming this responsibility primarily because of lack of competent management. Fully conscious of this, the land bank officials are now undertaking to correct the weakness by bringing several associations under one executive officer of demonstrated ability.

In the early years of the land bank system associations were established without following any logical plan of development. Three or four associations were created within the same trade area. The resulting duplication was unsound and uneconomic. Inadequate and irregular compensation has been a serious handicap in getting able men to serve as secretary-treasurer and give the necessary time to this task. The program now being undertaken provides for merging of associations where this can be done to advantage, a program which varying impairment of capital makes it difficult to effect. As a substitute for merger, when this is impracticable, several associations are asked to elect the same secretary-treasurer. This is illustrated in one Washington

county were eight associations are now managed by the same secretary-treasurer. The purpose of consolidation of the national farm loan associations is to place them on a firm basis and thereby to make it feasible to decentralize the making and administration of mortgage loans. When they are prepared to assume it, the local associations are being given more responsibility for the making of new loans, handling of collections and supervision of real estate acquired by foreclosure. This appears to be a wholesome trend and to the extent that it goes forward will give the associations the status that it was originally intended they should have.

Coordination of National Farm Loan Associations with Production Credit Associations: In addition to consolidating national farm loan associations the Farm Credit Administration has experimented with a plan of unification of national farm loan associations and production credit associations in the same locality under a single management.

The apparent advantages of coordination are that greater economy can be achieved by maintaining one office; a single farm credit office is more convenient for the farmer borrowers; and better qualified managers can be secured because of the higher compensation which can be paid.

On the other hand, the volume of business has made it necessary to include more territory in the production credit associations than that covered by national farm loan associations. It has been found also that making of mortgage loans calls for a different type of training and experience than handling production loans. There is the further objection that the executive officer is subject to two separate board of directors and to two different supervisory authorities at the district headquarters.

In order to meet some of these objections and still secure the advantages of unification, one or more national farm loan associations and a production credit association have, in a few localities, maintained adjacent offices. In some instances, national farm loan secretaries are being used by the production credit associations as local representatives to serve the territory as a distance from the home office. While some form of coordination appears probable, further consideration and experimentation seems necessary before the Farm Credit Administration will feel ready to propose any form of organization than can be adopted universally.

Ownership by Farmer-Borrowers: During the emergency years the cooperative ownership feature of the land banks has been largely lost sight of and the loans made by all the units of the Farm Credit Administration have been generally thought of

as "government loans." The reason for this is not difficult to find. Huge sums have been poured out in direct government loans by the Reconstruction Finance Corporation, by the regional agricultural credit corporations, in emergency seed and feed loans and through Commissioner loans. The capital of the federal land banks has been augmented by Treasury purchases of stock and subscriptions to paid-in surplus. The federal intermediate credit banks are utilizing more than twice as much government-owned capital as they did three years ago. Production credit institutions and banks for cooperatives have been established with government capital. Bonds of the Federal Farm Mortgage Corporation are guaranteed as to principal and interest by the government. It is not surprising, therefore, that the public and even the farmers look upon these various agencies as government rather than cooperative institutions. To correct this misunderstanding, the officers of the Farm Credit Administration are waging a determined campaign of education.

The proportion of stock in the production credit associations and the banks for cooperatives owned by borrowing farmers or borrowing cooperatives is very small relative to the stock owned by the government and the ratio of capital to liabilities is very high in these institutions. Of the capital of the federal land banks, approximately half is owned by borrowers and half by the government. The federal land banks were launched in 1917 with government capital but provision was made for the gradual substitution of stock owned by the borrowing farmers for that provided by the Treasury. By the end of 1931, the government-owned stock had been retired in all of the land banks except two. In 1932, however, the government subscribed $125,000,000 to their capital and again became the majority stockholder.

The Emergency Farm Mortgage Act of 1933 provided that the Secretary of the Treasury subscribe to the paid-in surplus of the federal land banks an amount necessary to cover certain extensions and deferments of principal installments authorized under that law. In the years 1933-1935 $91,605,112 was subscribed by the Treasury to paid-in surplus. As a consequence of the changes of recent years the Government now owns practically two dollars of capital and surplus for each dollar owned by farmer borrowers. It is provided, however, that the capital subscribed by the Treasury in 1932 shall be retired in the same manner as was done after 1917.

The proceeds from the retirement of government-owned stock of the federal land banks are to be retained in the Treasury as a revolving fund subject to call by the land banks. This is available

if needed to strengthen a bank's capital and in May 1935 $11,000,000 was returned to the banks from the revolving fund.

There are weighty considerations in favor of ending government participation in the ownership of the banks and associations, but it does not appear to be desirable to do so unless at the same time provision is made for a larger amount of privately-owned capital. It has been demonstrated that the 5 per cent "cushion" of farmer-owned capital is not sufficient in time of emergency. The loanable funds of the federal land banks and the intermediate credit banks are drawn from the investment markets. In 1930 and 1931 the capital of the federal land banks was not adequate to sustain their credit, and the Treasury had to come to the rescue.

The rates of interest charged by the land banks to the borrowing farmers are dependent upon the interest rate at which they in turn can obtain funds from the investment markets. New mortgage loans are now being written at a rate of 4 per cent. This rate has been made possible by the easy conditions prevailing in the money markets of the country generally and the excellent credit of the land banks. The federal land banks refunded or sold for cash $606,718,000 of bonds in 1935. A large block of 4½ per cent bonds were refunded as of July 1, 1935 in 3 per cent consolidated land bank bonds. These bonds have been quoted in the market at par or above. There is no government guarantee either of principal or interest upon these bonds. The market appraisal of the bonds attests the investing public's confidence in the financial condition of the federal land banks. The ability of the land banks to sell 3 per cent bonds at par in recent months is due in large measure to the increased capital.

Frank recognition of the need for more than a 5 per cent ratio of capital to liabilities and provision for the permanent retention of government capital approximately equal to that of the farmer-borrowers in all of the institutions would appear to be desirable. If deemed expedient, the government capital might be represented by preferred stock. This policy should be made immediately effective with respect to the land banks to maintain approximately the present ratio between government and private capital.

Government Subsidization of Interest Rates: In order to give relief to farm debtors during the depression the interest rate on all land bank loans then outstanding was reduced by the Emergency Farm Mortgage Act of May 1933 to 4½ per cent (the average rate was then approximately 5.4 per cent). The Farm Credit Act of 1935 cut the rate to 3½ per cent for the year begin-

ning July 1, 1935, and to 4 per cent for the two years following July 1, 1936. The 3½ per cent rate was extended in June 1936 for another year. The loss of income for the land banks, caused by interest reduction, has been made up by a direct appropriation from the Treasury. The payments made for this purpose in 1933-1935 amounted to $30,605,069.

These temporary interest reductions can be defended as an emergency relief measure but a program of this kind, once instituted, is not easily abandoned. This has been demonstrated by the recent extension of the 3½ per cent rate for one year.

If the temporary rate reductions are not further extended by Congress a new problem will arise when the interest rates are restored to the original rates of the mortgages. On loans made since June, 1935 the interest rate has been 4 per cent, the lowest rate ever accorded to borrowers from the federal land banks. On older mortgages it has been typically from 5 to 6 per cent. Borrowers who have enjoyed a rate of 3½ to 4 per cent for a period of years will doubtless rebel against going back to the higher rates. In spite of extensive refunding operations in 1935 approximately three-fourths of the outstanding bonds of the federal land banks on December 31, 1935 bore an interest rate of 4, 4¼ or 4½ per cent (all 5 per cent bonds had been retired by that time). Since the operating costs of the banks have normally absorbed the full one per cent spread between interest charged and interest paid general rate reductions could only be accomplished by a continuation of Government subsidy.

Loans to Purchase Farms: An avowed purpose of the Federal Farm Loan Act in 1916 was to reduce farm tenancy. In this respect it has been disappointing, only a small percentage of borrowers have been tenants. Analyses have shown that, of the land bank borrowers who purchased land with proceeds of their loans, more than half made use of a second mortgage. This suggests that loans up to 50 per cent of the value of the land are not adequate from the borrowers standpoint where farms are being purchased.

On the other hand, the land banks must minimize losses and preserve their credit at a high level in order to be able to obtain funds from the investment market upon favorable terms. The experiment now being made of allowing Commissioner loans to be used for purchase of farms provides a means for loaning up to 75 per cent of the value of the land. From the experience with these loans and with the 80 per cent loans of the National Housing Administration, conclusions may be reached as to the feasibility of loaning farmers and home owners more than the traditional 50 per cent of value.

HOW HOGS ARE TRANSPORTED TO MARKET IN THE CORN BELT

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The motor truck has replaced the railroad to a very large extent as a means for transporting livestock to market. Data on the number of hogs received by rail and by truck (designated as driven-in) at several of the important public livestock markets are available since 1916. In 1934, in connection with a comprehensive study of direct marketing of hogs,[1] information of the type of transportation used, and of certain market practices followed when selling at places other than public markets, was obtained through contacts with packers and other buyers of hogs, and with hog producers.

In 1935, 70 per cent of the hogs received at 12 principal public stockyards in the corn belt[2] were reported as driven in. Practically all livestock thus reported in recent years arrived at the markets in motor truck, and for all practical purposes may be referred to as truck receipts. In 1916, only 1.6 per cent of the hogs were driven in at these yards. The increase in the proportion thus delivered has since been continuous. In 1933 the number driven in totaled 17,347,211. In 1934 and 1935 total marketings were drastically curtailed as a result of greatly reduced hog production. The public stockyards at Chicago was the only market in the corn belt which received more hogs by rail than by truck in 1935.

The increase in the proportion of hogs delivered by truck to the public markets in the different corn belt regions from 1916 to 1935, is shown in the accompanying figure. Although truck receipts increased continuously since 1916, it was not until 1925 that such receipts represented as much as 10 per cent of the combined total receipts in any of these regions. Since that year, the proportions handled by trucks have increased rapidly, and in 1935 truck deliveries represented 92 per cent of the total receipts at the markets in the Northwestern corn belt, 89 per cent of those in the Southwestern corn belt, and 58 per cent in the Eastern corn belt. The percentage in the Eastern corn belt

[1] Published in 1935 as Misc. Pub. 222, U.S.D.A. "The Direct Marketing of Hogs."

[2] The public markets for which data on driven in hogs are available for this period are: Chicago, Cincinnati, East St. Louis, Indianapolis, and Milwaukee in the eastern corn belt: Omaha, Sioux City, Sioux Falls, and South St. Paul in the northwestern corn belt; and Kansas City, St. Joseph, and Wichita in the southwestern corn belt. Reported in Livestock, Meats and Wool Division: "Driven-in Receipts of Livestock," U. S. Dept. of Agr., Bur. Agr. Econ., 28 pp., 1936 (mimeographed).

would be larger were it not for the fact that the market at Chicago receives a relatively large proportion of hogs by rail. It was not until 1930 that receipts of hogs by truck at Chicago constituted as much as 5 per cent of the total receipts at that market. However, the proportion has since increased rapidly, and in 1935, it represented 35 per cent of all the hogs received at that market.

Although other kinds of livestock are transported to market by truck in smaller proportions than are hogs, these proportions have increased considerably in recent years. In 1935, truck receipts of cattle at the same 12 corn belt markets represented 49 per cent of total cattle receipts, those of calves 63 per cent, and of sheep and lambs 35 per cent.

The proportion of hogs delivered by truck at the different public markets in the corn belt varies considerably, Table 1.

TABLE 1. TRUCK (DRIVE-INS) AND TOTAL RECEIPTS OF HOGS DELIVERED BY TRUCK AT 23 PUBLIC MARKETS IN THE CORN BELT STATES, 1933.

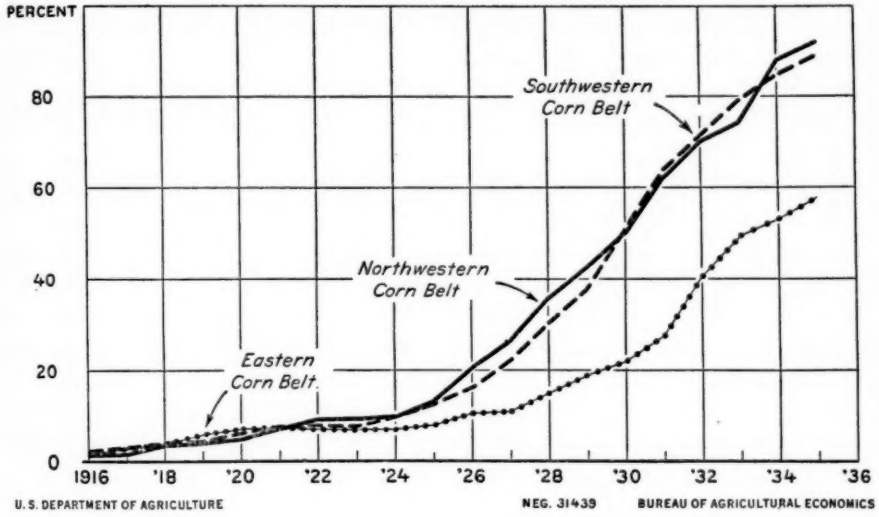
	Per cent of total		Per cent of total
Eastern Corn Belt:		Northwestern Corn Belt:	
Chicago, Ill.	25.1	Omaha, Neb.	76.2
Cincinnati, Ohio	64.0	Sioux City, Iowa	84.7
Cleveland, Ohio	65.5	Sioux Falls, S. D.	99.1
Dayton, Ohio	86.5	So. St. Paul, Minn.	59.3
Detroit, Mich.	85.8		
E. St. Louis, Ill.	72.1	Total	74.2
Evansville, Ind.	99.1		
Indianapolis, Ind.	97.1	Southwestern Corn Belt:	
LaFayette, Ind.	100.0	Joplin, Mo.	100.0
Marion, Ohio	98.9	Kansas City, Mo.	69.2
Milwaukee, Wis.	39.1	St. Joseph, Mo.	94.0
Peoria, Ill.	96.7	Springfield, Mo.	99.9
Springfield, Ill.	100.0	Wichita, Kan.	72.3
Toledo, Ohio	86.7		
		Total	80.4
Total	55.0	All markets in Corn Belt States	64.2
Total (exclusive of Chicago)	78.3	All markets in Corn Belt States (exclusive of Chicago)	77.2

Transportation of Hogs to Different Types of Markets

The proportions of the hogs marketed which are transported by truck and by rail vary among different types of markets. They also vary among markets of the same type. Of the hogs bought direct at 60 packing plants, from which reports were obtained for 1933, slightly more than one-half arrived at the plants in trucks. This did not include the direct purchases of plants located in Chicago. If the purchases of these plants were included, the percentage of truck receipts would be somewhat smaller, because the hogs bought direct for the Chicago plants are delivered mostly by rail. Two-thirds of the hogs received at concentration yards in 1933 and most of the hogs received at auctions were de-

livered by truck. Sixty-four per cent of the hogs received at 23 public markets in the corn belt in that year were transported by truck. If Chicago, with its low proportion of truck receipts, were omitted from this group, the receipts by truck at these public markets would represent 77 per cent of the total receipts. This shows that the public markets in the corn belt receive a relatively larger proportion of their supply of hogs by motor truck than do the packing plants which obtain all or part of their hog supply through direct purchase. This proportion, however, is not as great as that delivered by truck to the concentration yards.

TRUCK RECEIPTS OF HOGS AS PERCENTAGE OF TOTAL RECEIPTS AT IMPORTANT PUBLIC MARKETS IN THE THREE CORN BELT REGIONS, 1916-35



Agencies Furnishing Hogs Direct to Packing Plants and Concentration Yards

Hogs sold at concentration yards and to packers direct in the corn belt are obtained from various sources and agencies. These include individual farmers, livestock dealers, cooperative livestock shipping associations, and packers' and concentration yards' agents and paid representatives.

The purchase of hogs by representatives of packers and concentration yards is in the nature of buying "on track" at local shipping points. This method of buying, however, is used by only a few packers and concentration yard operators.

Concentration yards, which are relatively large assembly points for hogs, have been established and are operated in the

producing areas by national packers, by a few of the larger interior packers, and by independent operators. Concentration yards owned by packers may dispose of all their purchases at a single packing plant, or in cases where several slaughtering plants are operated by the same concern, more than one plant may be supplied by such a yard.

In Table 2 the hogs bought direct in 1933 at packing plants and concentration yards in the corn belt are grouped according to the agency furnishing the hogs, and the transportation method used in making delivery. These direct purchases represented 13,924,577 hogs delivered at 59 packing plants (exclusive of hogs received by packers at plants located in Chicago), and 5,709,022 hogs delivered at 88 concentration yards.

Slightly less than one-third of the hogs marketed direct to packers and about one-half of those marketed at concentration yards were furnished by farmers and custom truckers. Packers buying hogs direct obtained a larger proportion of their supply from livestock dealers than did operators of concentration yards. About 5 per cent of the direct purchases of the packing plants and of the receipts at the concentration yards were obtained through the buying operations of employed agents acting as "track" buyers. Packers, exclusive of those located at Chicago, obtained 10 per cent of their hogs through concentration yards which they themselves operated. Of the direct purchases by packers (exclusive of those in Chicago), 8 per cent were furnished by cooperative livestock shipping associations. These associations likewise furnished about the same proportion of the hogs received at concentration yards.

Of the hogs bought direct by packers, farmers furnished 40 per cent of such purchases delivered to plants in the Eastern corn belt,[3] but only 26 per cent of those in the Northwestern corn belt. Packers in the Southwestern corn belt obtained a little more than one-third of their supply from farmers.

Livestock dealers play an important part in the direct marketing of hogs in the corn belt. In each of the three corn belt regions they furnished more than 41 per cent of the hogs bought direct by packers. The local livestock dealer buys hogs from the farmer in much the same manner as he did when direct marketing was less important. Now, however, he sells in considerable volume direct to packers and at concentration yards instead of consign-

[3] Eastern Corn Belt includes Ohio, Indiana, Illinois, Michigan, and Wisconsin; Northwestern Corn Belt, Minnesota, Iowa, North Dakota, South Dakota, and Nebraska; and Southwestern Corn Belt, Missouri and Kansas.

TABLE 2. DIRECT PURCHASES OF HOGS RECEIVED AT PACKING PLANTS AND CONCENTRATION YARDS IN THE CORN BELT IN 1933, CLASSIFIED ACCORDING TO METHOD OF TRANSPORTATION USED AND AGENCY FURNISHING HOGS

Received at Packing Plants[1]

Region and Agency Furnishing Hogs	Reports	Hogs transported					
		Rail	Truck	Total	Rail	Truck	Total
	Number	Number	Number	Number	Per cent	Per cent	Per cent
Eastern Corn Belt:							
Farmers[2]		21,314	1,112,826	1,134,140	1.5	80.2	39.8
Livestock dealers[3]		962,817	218,074	1,180,891	66.0	15.7	41.5
Packer & Concentration Yd. Rep.[4]		—	—	—	—	—	—
Own Concentration Yard		302,230	2,793	305,023	20.7	0.2	10.7
Cooperative Shipping Assn.		172,921	54,603	227,524	11.8	3.9	8.0
Total	31	1,459,282	1,388,296	2,847,578	100.0	100.0	100.0
Northwestern Corn Belt:							
Farmers[2]		28,990	1,952,919	1,981,909	0.8	49.8	26.5
Livestock dealers[3]		1,555,760	1,826,120	3,381,880	43.8	46.6	45.3
Packer & Concent. Yd. Rep.[4]		267,611	—	267,611	7.5	—	3.6
Own concentration Yard		985,326	40,050	1,025,376	27.8	1.0	13.7
Cooperative Shipping Assn.		714,635	101,679	816,314	20.1	2.6	10.9
Total	16	3,552,322	3,920,768	7,473,090	100.0	100.0	100.0
Southwestern Corn Belt:							
Farmers[2]		86,233	1,193,559	1,279,792	4.1	79.7	35.5
Livestock dealers[3]		1,284,870	298,772	1,583,642	6 1.0	20.0	43.9
Packer & Concent. Yd. Rep.[4]		481,722	—	481,722	22.8	—	13.4
Own Concentration Yard		126,123	—	126,123	6.0	—	3.5
Cooperative Shipping Assn.		127,799	4,831	132,630	6.1	0.3	3.7
Total	12	2,106,747	1,497,162	3,603,909	100.0	100.0	100.0
Total Corn Belt:							
Farmers[2]		136,537	4,259,304	4,395,841	1.9	62.6	31.6
Livestock dealers[3]		3,803,447	2,342,966	6,146,413	53.4	34.4	44.1
Packer & Concent. Yd. Rep.[4]		749,333	—	749,333	10.6	—	5.4
Own Concentration Yards		1,413,679	42,843	1,456,522	19.8	0.6	10.5
Cooperative Shipping Assn.		1,015,355	161,113	1,176,468	14.3	2.4	8.4
Total	59	7,118,351	6,806,226	13,924,577	100.0	100.0	100.0

Received at Concentration Yards

Eastern Corn Belt:							
Farmers[2]		3,074	1,310,655	1,313,729	2.6	75.7	71.1
Livestock dealers[3]		98,639	90,995	189,634	84.3	5.3	10.3
Packer & Concent. Yd. Rep.[4]		—	264,150	264,150	—	15.3	14.3
Own Concentration Yards		—	—	—	—	—	—
Cooperative Shipping Assn.		15,363	63,799	79,162	13.1	3.7	4.3
Total	31	117,076	1,729,599	1,846,675	100.0	100.0	100.0
Northwestern Corn Belt:							
Farmers[2]		67,550	1,398,586	1,466,136	3.6	74.5	39.1
Livestock dealers[3]		1,478,842	426,340	1,905,182	79.1	22.7	50.9
Packer & Concent. Yd Rep.[4]		12,214	—	12,214	0.7	—	0.3
Own Concentration Yards		—	—	—	—	—	—
Cooperative Shipping Assn.		311,222	53,209	364,431	16.6	2.8	9.7
Total	48	1,869,828	1,878,135	3,747,963	100.0	100.0	100.0
Southwestern Corn Belt:							
Farmers[2]		—	92,884	92,884	—	93.5	81.2
Livestock dealers[3]		7,600	5,900	13,500	50.3	6.0	11.8
Packer & Concent. Yd. Rep.[4]		7,500	—	7,500	49.7	—	6.6
Own Concentration Yard		—	—	—	—	—	—
Cooperative Shipping Assn.		—	500	500	—	0.5	0.4
Total	9	15,100	99,284	114,384	100.0	100.0	100.0
Total Corn Belt:							
Farmers[2]		70,624	2,802,125	2,872,749	3.5	75.6	50.3
Livestock dealers[3]		1,585,081	523,235	2,108,316	79.2	14.1	36.9
Packer & Concent. Yd. Rep.[4]		19,714	264,150	283,864	1.0	7.1	5.0
Own Concentration Yard		—	—	—	—	—	—
Cooperative Shipping Assn.		326,585	117,508	444,093	16.3	3.2	7.8
Total	88	2,002,004	3,707,018	5,709,022	100.0	100.0	100.0

[1] Packers located at the Chicago public market are not included.
[2] Hogs furnished by farmers and custom truckers.
[3] Dealers who have established locations, and truckers who buy from farmers.
[4] Track buyers representing packers and concentration yards, and trucks operated by concentration yards.

ing the stock to public markets. Some dealers have been eliminated but others have assumed additional functions in marketing. When local dealers sold at public markets, their hogs were consigned to a commission merchant and were disposed of by him. Now, local dealers who market direct act as their own selling agents. If they operate trucks they also perform the additional function of transporting the livestock to market—in most cases collecting the hogs at the farm and delievering them to the packing plan, concentration yard, or public market. Intelligent buying and selling on the part of the dealers necessitate keeping informed on prices and other market conditions at the various markets at which they may dispose of their hogs. Radio receiving sets in their offices or trucks serve as one means of obtaining this information. The telephone is used extensively in contacting packers and concentration yard operators who are buying hogs.

No track buying of hogs was reported by packers in the Eastern corn belt, but this method was used in making 13 per cent of the purchases in the Southwestern corn belt, and 4 per cent in the Northwestern corn belt.

Hogs obtained by packers through their own concentration yards represent an important volume at some plants. In 1933, packers in the Northwestern corn belt obtained 14 per cent of their supply through such yards. In the Southwestern corn belt this method of buying was used in making 3 per cent of packers' purchases, and in the Eastern corn belt (exclusive of the plants in Chicago) 11 per cent were obtained through this source. Concentration yards are used more extensively by the national packers located at Chicago than by any other group of packers. Of the hogs purchased direct in 1933 for the plants at Chicago operated by the national packers, 60 per cent were secured through the concentration yards owned by these packers.

Many cooperative livestock shipping associations sell hogs direct to packers. Eleven per cent of the hogs received direct by packers in the Northwestern corn belt were furnished by cooperative associations. Purchases from this source represented 8 per cent of the total in the Eastern corn belt, and 4 per cent in the Southwestern corn belt.

The sources from which the concentration yards in the Northwestern corn belt received their supply of hogs were somewhat different from those of the yards located in the other corn belt regions. The most pronounced differences were the relatively large proportion of hogs obtained from dealers and the relatively small proportion obtained from farmers in the Northwestern

corn belt. Concentration yards in this region obtained slightly more than one-half of their hogs from dealers, whereas those in the Eastern corn belt received only 10 per cent and those in the Southwestern corn belt 12 per cent from this source. Receipts from farmers at concentration yards in the Northwestern corn belt represented 39 per cent of the hogs delivered at these yards, compared with 81 per cent in the Southwestern corn belt, and 71 per cent in the Eastern corn belt. Purchases made by the concentration yards' representatives were insignificant in the Northwestern corn belt, but were rather important in the Eastern corn belt. Cooperative livestock shipping associations furnished 10 per cent of the hogs purchased at concentration yards in the Northwestern corn belt, 4 per cent of the purchases in the Eastern corn belt, and a negligible proportion of the Southwestern corn belt.

The type of transportation used varies considerably among the different agencies which supply hogs direct to packers and to concentration yards. The motor truck is the most common means of transportation used by farmers who market their own hogs. Some large producers of hogs ship by rail, but the truck is now being used more and more by them for transporting hogs to market.

Custom truckers and country dealers who use their own trucks for picking up livestock at the farm handled a considerable volume of the hogs marketed in the corn belt in 1933. Custom trucking is apparently most important in the Southwestern corn belt and least important in the Northwestern corn belt. Truck operators who furnish custom trucking service in many instances also operate as dealers in livestock.

Packers reported separately the estimated number of hogs which they received by truck from dealers to whom they had been delivered at their established place of business, and from truckers who buy hogs from farmers in the country. The number reported as received by each type of dealer was about the same. However, the segregation of the volume handled by the two groups is very difficult to make because many dealers who have hogs delivered to them at their place of business also operate trucks in the country for acquiring part of their supply.

Livestock dealers operating at an established place use rail transportation to a greater extent than trucks regardless of whether the hogs are disposed of at packing plants or at concentration yards. Truckers who buy hogs from farmers for resale dispose of a relatively larger proportion of such hogs at packing

plants than at concentration yards. Nearly all of the hogs purchased by track buyers, and by packers at their own concentration yards, are transported by rail to the packing plant. Most of the hogs going from cooperative livestock shipping associations to packers direct and to concentration yards, are also transported by rail.

Distance that Hogs Are Transported when Marketed Direct

Hogs moving direct to packing plants, or to concentration yards, on the average, are transported longer distances by rail than by truck. However, it is not uncommon for hogs to be shipped short distances by rail or to be transported relatively long distances by truck when marketed. Table 3 shows the extent to which hogs are transported various distances when sold to concentration yards and direct to packers in the different Corn Belt regions. In supplying the data used in this table most of the packers and managers of concentration yards found it necessary to estimate the proportion of their hog receipts which came various distances. Some, however, had previously made studies to obtain the information of this character and were in position to furnish fairly accurate records.

Of the hogs transported by truck and sold direct to packing plants, 27 per cent were moved a distance of less than 25 miles in making the delivery. In the case of those transported by rail, only 3 per cent were moved less than this distance. Fifteen per cent of those transported by truck and 71 per cent of those moved by rail came a distance of more than 100 miles. The average mileage that hogs were transported by truck to packing plants was greatest in the Southwestern corn belt, and least in the Eastern corn belt. This appears to be because packing plants buying hogs direct in the Southwestern corn belt are relatively closely concentrated, whereas, in the other regions they are more widely scattered. Rail receipts of hogs bought direct at packing plants were transported the shortest distance in the Northwestern corn belt, where 57 per cent came a distance of 100 miles or less, as compared with 11 per cent in the Eastern corn belt, and 10 per cent in the Southwestern corn belt. In the Northwestern corn belt, the extensive use of rail transportation for hogs moving relatively short distances is apparently accounted for in considerable part by the large numbers which are sold to packers direct by livestock dealers. It is very common for livestock dealers to have the hogs delivered to them at the local shipping points where

they maintain their place of business, and then forward the animals to packing plants in carlot by rail.

Hogs sold at concentration yards were transported shorter distances on the average than were those sold at packing plants. Concentration yards are more numerous than packing plants, and are also more widely scattered over the producing areas. A

TABLE 3. DIRECT PURCHASES OF HOGS RECEIVED AT PACKING PLANTS AND CONCENTRATION YARDS IN THE CORN BELT IN 1933, CLASSIFIED ACCORDING TO METHOD OF TRANSPORTATION USED AND DISTANCE HOGS WERE TRANSPORTED

Region and Distance Transported	Hogs Transported							
	Received at Packing Plants[1]				Received at Concentration Yards			
	Reports	Rail	Truck	Total	Reports	Rail	Truck	Total
	Number	Per cent	Per cent	Per cent	Number	Per cent	Per cent	Per cent
Eastern Corn Belt:								
Less than 25 miles		1.8	44.1	11.4		3.0	77.1	72.4
Between 25 and 50 miles		1.9	34.2	9.2		10.0	17.6	17.1
Between 50 and 100 miles		7.5	17.1	9.7		6.0	4.5	4.6
More than 100 miles		88.8	4.6	69.7		81.0	0.8	5.9
Total	35	100.0	100.0	100.0	31	100.0	100.0	100.0
Northwestern Corn Belt:								
Less than 25 miles		5.3	30.1	18.9		20.6	74.7	49.1
Between 25 and 50 miles		17.6	36.2	27.8		29.5	19.2	24.1
Between 50 and 100 miles		34.2	25.2	29.3		26.5	5.2	15.3
More than 100 miles		42.9	8.5	24.0		23.4	0.9	11.5
Total	16	100.0	100.0	100.0	50	100.0	100.0	100.0
Southwestern Corn Belt:								
Less than 25 miles		—	5.4	2.2		52.2	87.3	82.6
Between 25 and 50 miles		0.6	16.5	7.2		40.3	12.2	15.9
Between 50 and 100 miles		10.7	36.3	21.4		7.5	0.5	1.5
More than 100 miles		88.7	41.8	69.2		—	—	—
Total	12	100.0	100.0	100.0	9	100.0	100.0	100.0
Total Corn Belt:								
Less than 25 miles		2.8	26.8	13.0		19.8	76.2	57.0
Between 25 and 50 miles		7.6	31.6	17.9		28.5	18.3	21.8
Between 50 and 100 miles		18.5	26.4	21.9		25.1	4.7	11.7
More than 100 miles		71.1	15.2	47.2		26.6	0.8	9.5
Total	63	100.0	100.0	100.0	90	100.0	100.0	100.0

[1] Packers located at the Chicago public market are not included.

considerable volume of hogs moved by rail to concentration yards in the Northwestern corn belt but such movement was relatively small in the other regions of the corn belt. This, too, appears to be largely because of the extent to which livestock dealers operate in this region. The method of these dealers in handling livestock is substantially the same whether they sell at concentration yards or direct to packers.

The relatively long distance which some hogs are transported to concentration yards and packing plants in areas where such markets are located rather close together gives some indication of the movement which takes place from one territory to another.

Hogs received at these local markets are not all obtained from the territory adjacent to such markets. In fact, the practice of competing for hogs in a certain area by several buyers representing packing plants and concentration yards, as well as independent buyers of livestock and cooperative associations, is common. The relationships between the bids of the various buyers of hogs frequently change, and alert sellers who sell direct usually endeavor to find the outlet which promises to give the highest net return. This often requires that the hogs be disposed of at markets other than those located in the immediate territory.

INTERRELATIONSHIPS OF LIVESTOCK PRODUCTION AND CROPPING SYSTEMS ON IOWA FARMS*

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Governmental programs to induce farmers to grow more acres of grass and fewer acres of grain have caused an unusual current interest in the relationship between the feed supply and the type of livestock production. Speculation as to changes in livestock production likely to result from anticipated changes in the cropping system have rarely been based on quantitative data simply because such data were not available.

The research upon which this paper is based was a definite attempt to analyze relevant quantitative data and determine what, if any, generalizations appear to be supported. Pending the report on further studies under way at this station and elsewhere, the results presented here should be taken as suggestive rather than as conclusive. The data used were obtained by a detailed survey of the cropping and livestock practices on all the farms in selected sample areas. Five blocks of four sections each were carefully selected on the basis of their representativeness with respect to soil types, type of farming and size of farms in each of the major type-of-farming areas. The location of these blocks is shown in figure 1. From 65 to 75 records were obtained in each type-of-farming area.

In order to get comparisons and contrasts of the grain and roughage feed supply and livestock production, the farms in each type-of-farming area were divided into 3 approximately equal groups on the basis of the ratio of grass land in the rotation to corn land. Comparable groups for each type-of-farming area were later combined to get total or average state figures.

Heavy Grass Farming Doubles Roughage Supply

In 1933 the 115 farms in the 5 type-of-farming areas in Iowa which had the highest grass acreage in relation to corn, had on the average approximately 1,141 feed units of hay and pasture available for livestock production. Contrasted with this is the 109 "heavy grain" farms which had the lowest grass acreage in relation to corn. These farms had only approximately 600 feed

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units of hay and pasture available for livestock feeding. There was relatively little difference, however, in the quantity of grain normally fed on the farms in these two groups.[1] The ratio of feed units of pasture and hay to grain fed on the heavy grain farms was 1:3.2, on the "average" farms 1:2.4, on the heavy grass farms 1:1.8.

The heavy grass farmers normally feed as much or more grain to livestock than do the heavy grain farmers, it appears, not be-

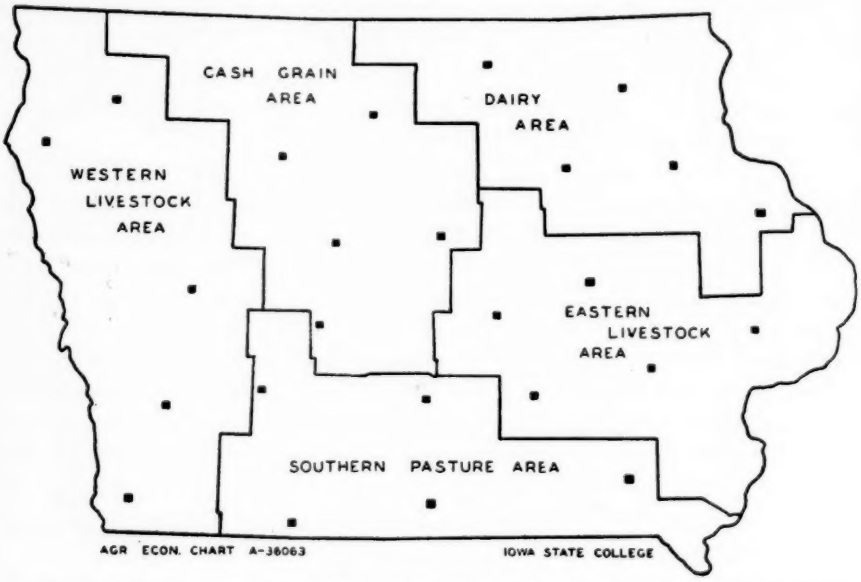

Fig. 1. Major type-of-farming areas in Iowa and location of 25-4 section blocks surveyed.

cause they produce as much or more grain, but rather because they sell less off their farms. In 1933 sales averaged about 17 per cent of the crop on the heavy grain farms but only 7 to 8 per cent on the farms in the other two groups. The acres of soil conserving and soil depleting crops, and permanent pasture per farm in each group in 1933 is shown in figure 2. The detailed cropping systems are as follows (on the basis of 100 acres of cultivated land):

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[1] The types and quality of pasture and hay was taken into consideration in estimating the roughage supply in terms of feed units. All feeds were converted into feed units on the following basis:

1 bushel corn	1 feed unit
1 bushel oats	.43 " "
1 ton mixed hay	15 " "
1 ton Alfalfa hay	20 " "
1 acre rotation pasture	18 to 25 feed units
1 acre tillable permanent pasture	12 to 18 " "
1 acre non-tillable permanent pasture	10 to 18 " "

	Heavy Grain Farms	"Average" Farms	Heavy Grass Farms
Farms—Number	109	115	115
Corn—acres	53	48	40
Small grain—acres	34	28	28
Hay and rotation pasture—acres	12	22	32
Miscellaneous—acres	1	2	0
	100	100	100
Permanent pasture—acres	24	28	26

The heavy grain farms averaged 149 crop acres in size; the "average" farms 140, and the heavy grass farms 148 crop acres so it is possible to compare data on a per farm basis without having differences in farm size upset the picture.

It is interesting to observe that the heavy grass farmers had about 23 per cent smaller soil depleting bases than the heavy grain farmers. This is somewhat more of a reduction in soil de-

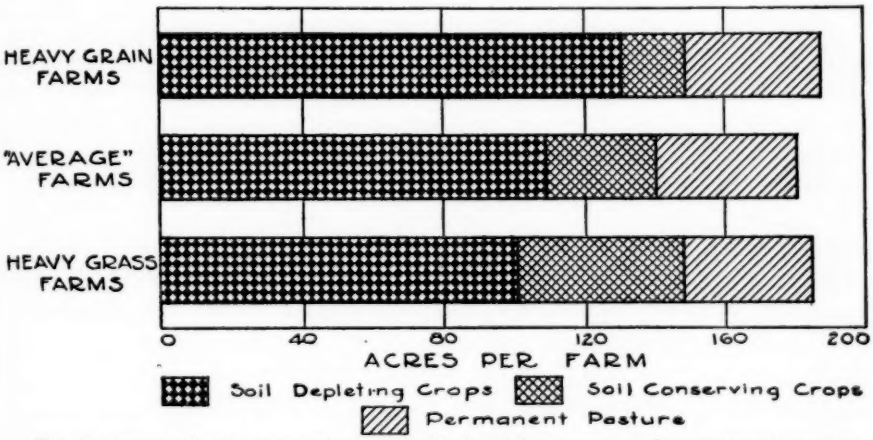

Fig. 2. Acres of soil conserving and soil depleting crops and permanent pasture per farm, 1933.

pleting crops than the 1936 soil conservation program is attempting to bring about. For this reason the contrasts between the feed supply of the heavy grain farmers and the heavy grass farmers is somewhat greater than the change in the feed supply which might be expected as a result of the soil conservation program.

"Average" Farms Produce Most Feed

Before analyzing the changes in the character of the livestock production which are associated with these differences in grain and roughage production and utilization, a few observations with respect to total feed unit production appear to be in order. It appears that those farms which now have a very high proportion of their cultivated land in grain production, as the heavy grain

farmers do, may expect to increase their total feed unit production over a period of time if they will reduce their grain acreage, increase their grass acreage and feed more livestock, as the "average" farmers have done.

The three groups of farms compared as follows in 1933:

	Percent of cultivated land in:		Feed units produced per 100 acres		
	Soil depleting crops	Soil conserving crops	Grain	Grass	Total
Heavy grain farms	88	12	2846	250	3096
"Average" farms	77	23	2711	450	3161
Heavy grass farms	68	32	2283	650	2933

While the heavy grass farmers had only 68 per cent of their cultivated land in grain production, giving them a substantially smaller output of grain, their estimated roughage production was 650 feed units making a total feed unit production only about 5 per cent lower than the heavy grain farmers.

Several qualifications and explanations should accompany such comparisons. First, the feed unit conversion factors, i.e. the assumption that a ton of mixed hay is equivalent to 15 bushels of corn, etc., are based on the utilization of the feeds in a reasonably balanced ratio. It may be that where the roughage is so plentiful, relatively, as it is on the heavy grass farms, it is not economically balanced with concentrates in feeding, resulting in a much less total livestock production than the feed unit production figures would lead one to expect. There is a more important factor, however. In general, the heavy grass farms are on the land which is inferior in natural productive capacity to the land in the heavy grain farms. For this reason, these data tend to under-state rather than over-state the increase of grain yields per acre which may be expected as a result of growing more grass in the rotation. This is well illustrated by comparative data in the Eastern Livestock, Southern Pasture and Dairy areas.

The soil types in the state of Iowa have been classified into five groups on the basis of inherent productivity. Classes one and two are the most productive upland, terrace and bottom soils. The following data show the percentage of the land in each of the groups of farms classifying as Grade I or II land:

	Heavy Grain Farms	"Average" Farms	Heavy Grass Farms
Dairy Area	68	58	23
Eastern Livestock Area	76	68	53
Southern Pasture Area	60	48	48

Almost all of the land in all three groups of farms in the Cash Grain and Western Livestock areas classifies as Grade I or II.

In the Cash Grain area where the inherent productivity of the soil is most uniform, a difference in the proportion of the cul-

tivated acreage devoted to soil depleting crops from 97 per cent on the grain farms to 83 per cent on the heavy grass farms did not result in any decrease in grain production per 100 acres of cultivated land in 1933. The heavy grass farms in addition to producing an equal quantity of grain, had the roughage production from 14 acres which was released from grain production. In the Eastern Livestock Area the "average" farmers had 14 per cent fewer acres of soil depleting crops than the heavy grain farmers but actually had about three per cent higher grain production in 1933, in addition to releasing 11 acres for grass production. This maintenance of grain production on a reduced acreage was even accomplished on inferior land as shown by the previous data. Similar data could be presented for the same groups in the Western Livestock Area.

The main factors apparently accounting for the difference in yields per acre and grain production per 100 acres are the increased use of legumes and grasses in the rotation and the increased feeding of livestock on the farms where the grass acreage is higher. In the Dairy and Southern Pasture areas, these factors are apparently more than offset by the lower quality of the land on the "average" farms as compared with the heavy grain farms. In any event, grain production per 100 acres of cultivated land was markedly lower in both groups as compared to the heavy grain farms.

Another factor operating to minimize the reduction of feed unit production on the heavy grass farms was the fact that these farmers reduced the small grain as much as the corn acreage. In fact, while the soil depleting acreage was 13 per cent less on the "average" farms as compared with the heavy grain farms, corn acreage was only 9 per cent less but small grain acreage was 18 per cent lower.

Heavy Grass Farms Had the Most Livestock

Area differences in character of livestock production are fully as important as the differences found between the three groups of farms in the same areas. The average livestock system for each group of farms in the state as a whole will be discussed first, however, with individual area differences pointed out from time to time. The average number of hogs produced, milk cows, other cattle and horses on these three groups of farms is shown in figure 3. The high hog production on the farms with high acreages of soil conserving crops is perhaps the most striking comparison brought out.

A more detailed statement of the hundredweight of hogs produced and normal number of livestock on hand January 1, (on the basis of 100 acres of cultivated land) follows:

	Heavy Grain Farms	"Average" Farms	Heavy Grass Farms
Hogs produced—cwt.	150	175	172
Milk cows—number	6	7	7
Beef cows—number	2	3	4
Other cattle—animal units	8	8	10
Ewes—animal units	–	–	1
Horses—animal units	4	4	4
Total—Roughage-consuming animal units	20	22	26

Paradoxical as it may seem, these data indicate the most livestock is kept on the farms where the least grain is raised.

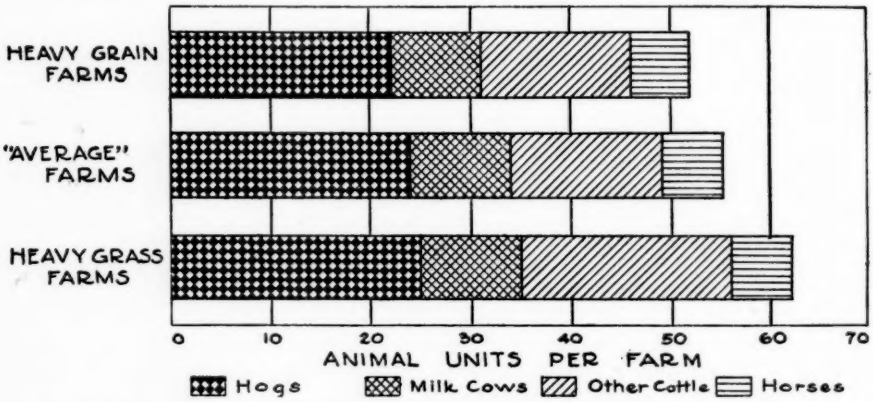

Fig. 3. Animal units of hogs, milk cows, other cattle and horses normally kept per farm.

One animal unit of hogs was considered as 1000 pounds of hogs produced. Poultry kept amounted to about 150 hens per farm and only on the heavy grass farms were sheep sufficiently important to account for an animal unit.

It is only by a study of these data in conjunction with those on feed utilization presented earlier and a consideration of area differences that their full significance can be grasped. Was this situation general in all the five major type-of-farming areas? Why should more hogs be produced on the farms raising more roughage? These are the first two questions that come to the minds of most readers.

The heavy grain and "average" farmers in the Dairy Area normally produced the same amount of hogs per 100 acres of cultivated land. This is the only exception to the rule that the "average" farmers in every area produced more hogs per 100 acres than the heavy grain farmers. As might be expected, the

largest increase was in the Cash Grain Area and the smallest was in the Southern Pasture Area. This consistency of association between a moderate grain-roughage ratio and a higher production of hogs than with a higher ratio of grain to roughage appears to be significant. After adjustments for sales and purchases the "average" farmers normally fed about 10 per cent more grain per 100 acres than the heavy grain farmers and had in addition 50 per cent more grass roughage. Under these conditions, instead of feeding a higher proportion of the grain to roughage-consuming animals to balance the larger roughage supply, they actually fed less—38 per cent of the total grain as compared to 43 per cent. In every type-of-farming area the "average" farmers fed hogs a higher proportion of their total grain normally fed than did the heavy grain farmers. It would appear that the availability of 50 per cent more grass roughage made possible and desirable the economizing of grain fed to cattle. No doubt the character of the cattle enterprise was changed somewhat with fewer farmers fattening their cattle on grain.

The fact that the heavy grass farmers maintained hog production on a level above the heavy grain farmers and comparable to the "average" men also appears to be significant. There were two exceptions to this rule—the Dairy and the Southern Pasture areas. But even in these areas on the heavy grass farms the hogs received a larger proportion of the total grain normally fed than on the heavy grain farms. Thus it appears that even when the grain available for feeding is extremely limited in relation to the supply of roughage, the grain is not used to any greater extent in balancing the roughage going to cattle, horses and sheep. The hogs and poultry received 59 per cent of the grain normally fed on the heavy grass farms in these two areas leaving 41 per cent for the roughage-consuming animals. On the heavy grain farms where there was approximately half as much roughage available they kept approximately the same number of roughage-consuming animals but fed them 43 per cent of the total grain.

These data suggest that a much less than proportional reduction in hog production may be expected when grain production is curtailed. In the areas where corn is normally sold, there appears to be some tendency for hog production to be increased as the grain production per 100 acres is decreased. This is a rational economic behavior of farmers for with less grain available to sell and more time available, in an attempt to maximize their incomes, they turn to livestock production including raising hogs. Hogs are more efficient than cattle in manufacturing corn into meat.

Where the volume of grain available was limited, the farmers appear uniformly to have used a higher proportion of it in this more efficient manner—for hog production.

Changes in Cattle, Sheep and Horse Numbers by Areas

In the Dairy and Southern Pasture Areas roughage-consuming livestock varied but little for the three groups. The comparison of these two areas with the other three in the state on the basis of roughage-consuming livestock normally on hand January 1 per 100 acres in cultivation is as follows:

	Heavy Grain Farms	"Average" Farms	Heavy Grass Farms
Dairy and Southern Pasture areas	25	25	26
Cash Grain, Eastern & Western Livestock areas	17	21	25

Both hog production and cattle numbers kept on the heavy grass farms were higher than on the heavy grain farms in the Eastern Livestock Area. This was made possible by net purchases of approximately 350 bushels of corn per 100 acres of cultivated land as compared with sales of 400 bushels per 100 acres on the grain farms. This suggests that a trend in the direction of more roughage production and less grain production on the grain farms, leading to less sales would necessarily reduce the volume of feeding on the heavy grass farms. The data on the whole suggest that cattle numbers and grain feeding of cattle would perhaps be more affected than hog production.

In the Cash Grain and Western Livestock Areas the farms with the lowest grain and highest roughage production were able to both produce more hundredweight of hogs and keep more cattle than the heavy grain farmers. They simply sold less grain and fed more on their farms. The data on the cattle enterprise include only age of purchases, sales and January 1 inventories, making it impossible to compute a net production figure as in the case of hogs. It was possible, however, to compute the bushels of corn and oats normally fed per animal unit. They show rather sharp reductions in the grain fed per head of cattle on the farms producing the most roughage with the exception of those in the Cash Grain and Western Livestock Areas. This suggests that perhaps more cattle will be grain fed in the surplus grain producing areas if grain production is more or less permanently reduced. But any such increase in the surplus grain producing areas may be more than offset by a reduction in grain feeding of cattle in the other areas of the state.

Butter Fat Production Per Cow

It appears significant that estimated normal butter fat production per cow was approximately the same on all three groups of farms except in the Dairy Area where the cattle enterprise is almost entirely a dairy proposition. Both milk cow numbers and butter fat production per cow was lower on the heavy grass farms in this area as compared with the other groups. The data on estimated normal butterfat production per cow in the dairy area as compared with the balance of the state is as follows:

	Heavy Grain Farms	"Average" Farms	Heavy Grass Farms
Dairy Area—Pounds of B.F. produced per cow	183	164	160
Other four areas B.F. produced per cow	157	161	159

Outside the Dairy Area there was a slight tendency for milk cow numbers to be higher on the farms which grew less grain and more roughage. The fact that butterfat production outside the Dairy Area was maintained on the "average" and heavy grass farms suggests that as the grain fed to cattle was reduced the milk cows did not share proportionally in the reduction. Thus it seems reasonable to conclude that if the response to the soil conservation program is as great in the Dairy area as in the other parts of the state, butter fat production will be reduced somewhat in that area, while being well maintained or somewhat increased in the balance of the state.

Other Livestock Enterprises

Sheep raising is a minor livestock enterprise in Iowa. In both the Southern Pasture and Eastern Livestock Areas, however, the farmers growing the most roughage and the least grain kept on the average 14 to 21 ewes.

There was some tendency for the farmers raising the most roughage to raise a few more colts than the other men, but the difference was slight. In general, there was no significant difference in the number of horses kept per 100 acres of cultivated land as between the three groups in the state.

The number of chickens kept per 100 acres of crop land and the per cent of grain fed to chickens varied from group to group in the different areas quite erratically. There does not appear to be any definite correlation between the size of this enterprise and the cropping system.

Miscellaneous Factors

Thus far no attempt has been made to suggest any of the reasons why farmers in the same type-of-farming area differ so greatly in the system of crop production followed. This discussion is not primarily concerned with the reasons, but is concerned with them to the extent that they may throw light on probable future adjustments. Data on per cent of farms owned, cultivated and total acres per farm, and per cent of land in productivity classes I and II were tabulated and compared. In the three areas having a high proportion of land of inferior productivity—the Dairy, Eastern Livestock and Southern Pasture Areas—variations in natural productivity of the soil appear to have the most influence on the cropping system followed.

The per cent of the total land in productivity classes I and II, the per cent of farms operated by owners and the total acres per farm for the three groups of farms in these three areas is as follows:

	Heavy Grain Farms	"Average" Farms	Heavy Grass Farms
Per cent of land in productivity classes I & II	68	58	41
" " " " operated by owners	56	74	65
Total acres per farm	194	186	174

In the Cash Grain Area, where the soil is most uniform in natural productivity, differences in tenure appear to be most highly correlated with systems of crop production. Only 19 per cent of the heavy grain farmers owned their farms as compared with 43 per cent of the "average" farmers and 59 per cent of the heavy grass farmers. The Western Livestock Area includes the western counties of the state running from north to south which are for the most part covered with Marshall soil on the upland and good bottomland and terrace soils along the Missouri and other rivers. While these soils classify in productivity classes I and II, there is a rather wide difference in their adaptability for crop and livestock production. With this exception, the data at hand appear to afford little in the way of an explanation of the reasons for differences in the cropping systems between the three groups of farms in this area. The per cent of farms operated by owners and the average size of farm was approximately the same in all three groups.

Summary and Interpretation

Will the present soil conservation program bring about the greatest adjustments on the present *heavy grain farms*? If it does, these data indicate that the long-time effect will be to in-

crease feed unit production. Will it induce the "average" farmers to reduce their acreage of soil-depleting crops still further? If it does, feed unit production on these farms may be slightly decreased. If it induces the present *heavy grass farmers* to still further increase their acreage of soil-conserving crops feed unit production is almost sure to be reduced on those farms.

The greatest change in the utilization of the crops grown—assuming less grain is produced as a result of increased attention given to the conservation of the soil—would appear to be the selling of less grain off the farms where grown—less grain sold outside the state and probably less grain sold from the grain surplus areas to the grain deficit areas within the state. If this actually proves to be the case, hog production would probably be slightly reduced in the deficit-grain-producing areas of the state and increased in the grain-surplus-producing areas. In the deficit-grain-producing areas roughage-consuming animals may be maintained at about present normal levels or perhaps increased slightly with the beef cattle absorbing most of the reduction in grain available for feeding. In the surplus-grain-producing areas roughage-consuming livestock may be increased somewhat and grain fattening increased.

These data furnish little grounds for the often expressed fear that dairy production in Iowa and in the Corn Belt generally will be stimulated to a ruinous extent by the soil conservation program.

MONTHLY POULTRY COSTS AND RETURNS

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In the poultry business there is much variation in costs and returns from month to month. The variations in returns are greater than the variations in costs. Variations in returns are largely accounted for by differences in egg prices, production per hen, and proportion of flock carried through the year. The methods used and the results obtained by poultrymen in their attempts to get the best returns from the flock are of much interest. In this article the analysis has been made on a monthly basis showing the profit derived from the poultry enterprise and the relative efficiency of producing eggs each month. This should provide added information as to the desirable production per month, best time of culling, extent of culling and, in addition, much other information that is not ordinarily presented in the usual enterprise cost reports.

The data for this article were obtained from detailed cost of production records on poultry flocks kept by poultrymen in cooperation with the Farm Management Department of this institution for the four years ending September 30, 1935. A total of 254 poultry cost records were available from this project. The flocks averaged 318 hens per farm on October 1, when the records were started. There were, therefore, over 80,000 hens and pullets included in the records on this project. Pullets made up 70 per cent of this number, and nearly all the remaining 30 per cent were yearling hens. Approximately 85 per cent of the flocks were White Leghorns.

In this study of monthly costs and returns on the laying flock, the problem has been approached from the standpoint of what were the costs and returns each month per 100 hens at the start of the year on October 1. It was thought that this basis was most practicable, and those who wish can easily calculate the data on a per hen basis. On these farms, 100 hens at the start resulted in an average number of 74 for the year. During the year these poultrymen culled out 43 hens, death loss took 19, so only 38 hens were left at the end of the year from the 100 at the start (Table 1). Although constant culling was the general practice on these farms, more hens were sold in August and September than other months in preparation for the new flock. Fairly heavy culling also was practiced in March, although greater net returns would have

TABLE 1. MONTHLY HEN NUMBERS PER 100 STARTED AND EGG PRODUCTION, 1932-35

Months	Number hens per 100 started:				Per cent egg prod.
	Died	Culled	Left	Av. for mo.	
October	1.2	2.1	96.7	98.4	22
November	1.7	2.8	92.2	94.4	26
December	1.9	2.6	87.7	90.1	33
January	1.9	2.3	83.5	86.2	39
February	1.8	2.1	79.6	82.5	44
March	2.0	4.8	72.8	77.6	54
April	1.8	3.0	68.0	72.3	60
May	1.7	2.5	63.8	67.7	61
June	1.6	3.0	59.2	63.1	55
July	1.4	3.6	54.2	58.4	48
August	1.2	6.4	46.6	52.8	43
September	.9	7.4	38.3	44.0	35
Total	19.1	42.6	—	—	—

resulted if the non-laying hens had been culled around February 1, before egg prices were too low. Death losses, as shown by the number of hens that died each month per 100 hens at the start, were fairly uniform throughout the year.

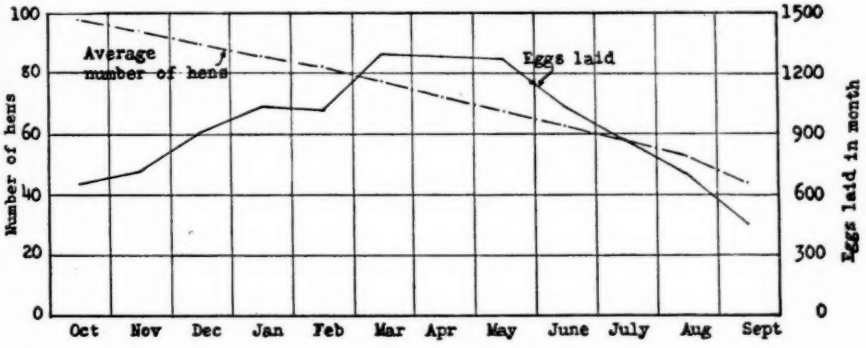

FIG. 1. Monthly egg production and number hens from 100 hens October 1.

Egg production during the year totaled 11,309 eggs for each 100 hens at the start of the year. Eggs laid per hen, calculated on the basis of average number of hens, averaged 153 eggs per hen in these flocks. Total eggs produced by the flock was almost constant for the three months, March, April and May, and the eggs laid these months made up 35 per cent of the year's production (Fig. 1). Monthly egg production ranged from a low of 22 per cent in October to 61 per cent in May.

Costs and returns per 100 hens at the start of the year, varied considerably from month to month (Table 2). These variations were due principally to the decreasing number of hens as the months passed, to difference in percentage egg production, to

weather conditions, and to variations in egg prices the various months. Total feed consumption was the highest in March, although January and December were only slightly less. Hours of labor spent on the flock averaged slightly over 50 per cent higher during the months of November through March than during the summer months.

The total cost of maintaining the flock was the highest in March, and the lowest in September (Table 2). Income, however, was the highest in December. There were less eggs produced by

TABLE 2. MONTHLY COST AND RETURNS FROM 100 HENS OCTOBER 1, 1932-35

Items	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Total
Av. no. of hens	98	94	90	86	83	78	72	68	63	58	53	44	11,309
Lbs. feed	492	491	550	569	528	574	521	501	454	420	364	268	5,732
Hrs. labor	11	13	13	13	13	13	10	9	8	8	8	8	127
Feed cost*	$ 7.68	$7.69	$8.51	$8.85	$8.16	$8.94	$8.11	$7.75	$7.01	$6.52	$5.66	$4.17	$89.05
Flock depreciation	2.56	2.95	2.77	2.62	2.60	2.97	2.52	2.30	2.13	1.99	2.06	2.20	29.67
Man labor	2.04	2.32	2.38	2.38	2.26	2.32	1.81	1.59	1.53	1.47	1.47	1.42	22.99
Other costs**	2.70	2.73	2.75	2.75	2.71	2.75	2.24	2.18	2.12	2.09	2.04	1.98	29.04
Total cost	$14.98	$15.69	$16.41	$16.60	$15.73	$16.98	$14.68	$13.82	$12.79	$12.07	$11.23	$ 9.77	$170.75
Income	14.22	18.53	21.40	20.08	16.99	18.05	17.84	17.84	13.90	12.92	11.43	8.87	192.07
Net return	−.76	2.84	4.99	3.48	1.26	1.07	3.16	4.02	1.11	.85	.20	−.90	21.32
Return per hour	.11	.40	.56	.44	.28	.26	.50	.64	.31	.28	.20	.06	.35

* One-half of the feed was mash and one-half scratch. The average cost of mash was $1.76 a hundred, and scratch $1.21.
** Includes buildings and equipment use, land use, overhead, interest on hens, lights, litter, medicine, cartons, etc.

these flocks, as an average, in December than any of the following six months, but egg prices were much higher so the total income was highest. Net return for management on these flocks was greater in December than any other month. The more profitable months were November, December, January, April and May. These flocks did not show a profit in October because average egg production was too low. The better managed flocks, where the pullets were sufficiently early (April 15 for Leghorns) to lay well in October, made a good profit that month. February and March were less profitable than the five months mentioned because egg prices fell faster than costs per dozen eggs produced those two months (Fig. 2). The flocks made little net profit from June through September, due to relatively low egg prices and high costs per dozen of eggs produced, although the return per hour of labor was fairly high in June and July.

Costs and returns per hen in the flock are shown in Table 3. Feed fed per hen was lowest in October and highest in March and May. Total cost per hen in the flock was lowest in October and highest the following September. The factors largely responsible

TABLE 3. MONTHLY POULTRY COSTS AND RETURNS PER HEN AND PER DOZEN EGGS, 1932-35

Items	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
PER HEN:*												
Eggs laid	6.8	7.7	10.1	12.1	12.4	16.8	17.9	18.8	16.4	14.8	13.3	10.6
Lbs. feed	5.0	5.2	6.1	6.6	6.4	7.4	7.2	7.4	7.2	7.2	7.2	6.9
Feed cost	7.8¢	8.1¢	9.4¢	10.3¢	9.9¢	11.5¢	11.2¢	11.4¢	11.1¢	11.2¢	10.7¢	9.5¢
Total cost	14.7	16.1	17.8	18.8	18.7	21.8	20.3	20.4	20.4	21.0	22.4	25.1
PER DOZEN EGGS:												
Lbs. feed	8.8	8.1	7.2	6.5	6.3	5.3	4.8	4.7	5.3	5.8	6.2	6.9
Total cost	26.9¢	25.8¢	21.6¢	19.1¢	18.4¢	15.6¢	13.6¢	13.0¢	14.8¢	16.8¢	19.2¢	25.0¢
Total income	25.5	30.5	28.2	23.1	19.9	16.6	16.5	16.8	16.1	17.9	19.5	22.7

* Calculated on the basis of average number in the flock each month.

for this situation were (a) less than one-half as many hens in the flock in September, making many items of cost quite high per hen, (b) relatively high feed consumption in September for

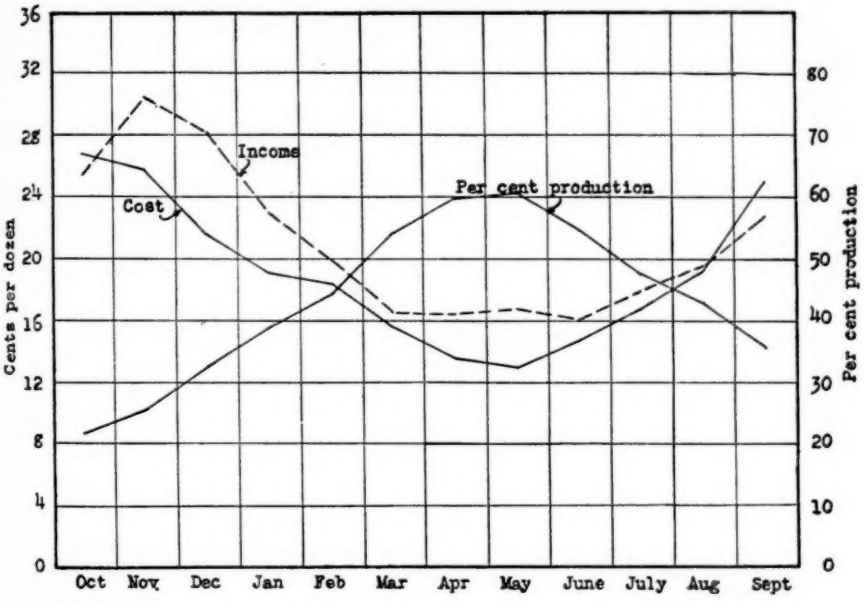

FIG. 2. Monthly cost and income per dozen eggs produced and per cent production.

amount of eggs laid, and (c) high depreciation in flock due to heavy culling.

From the standpoint of efficiency of production, eggs were produced at a lower cost by these poultrymen in May than any other month (Fig. 2). Only 4.7 pounds of feed was required per dozen of eggs in this month when the flocks were averaging 61 per cent egg production. The cost of producing a dozen of eggs was the

highest in September, October and November when egg production was at a low level. It took from 6.9 to 8.8 pounds of feed to produce a dozen eggs in these three months.

These data on monthly costs and returns show that poultrymen would add materially to their net return by getting their chicks early enough so that the pullets would be laying at least 40 per cent production in October and 50 per cent or better in November and December. The cost per dozen of eggs produced was high these months because the hens were not laying enough for efficient production. Poultrymen that keep hens over for the second year would probably find it advantageous to make the hens molt in midsummer so they can be gotten back into good production early in the fall when full-sized eggs sell at a premium. Farmers keeping a heavy breed of poultry, or having a particularly good market for meat may find it more profitable to sell their flock about June than to keep the hens until August or September, although there was a fair return for the labor required during those months. It should be recognized that some charges, like hen-house and equipment depreciation, interest and upkeep; and certain overhead items continue even though there are no hens. Whether to sell in June or keep the hens depends upon the price of eggs and meat, feed cost, breed of poultry, labor available and other considerations.

SOME PROBLEMS OF COUNTY GOVERNMENT

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Rural government is important not only to persons in rural areas but to the entire nation. Improved transportation and communication facilities, the widening of the market, the movement of rural youth to the city, and the increasing recognition given to the desirability of an educated citizenry, are forces which add to the statewide or nationwide significance of government in rural areas. The governmental services performed by rural units are, therefore, no longer of local concern only. Moreover the growing demand in rural areas for more governmental services indicates that the system by which they are administered will be of greater significance in the future than it has been in the past.

The economic depression has stimulated interest in the reduction in the cost of local government. The problems of local government, however, are broader than that of tax reduction; they include the provision of services and the method of financing them. A satisfactory system of local government designed to meet present and future needs must be one that provides the desired services efficiently and finances these services by an equitable system of taxation. Efficiency should not be interpreted as the lowest possible cost, but as the lowest cost consistent with continuous provision of the desired services.

With few exceptions, the major territorial subdivisions of the states are the counties,[1] patterned to a considerable extent after the traditional English county. In the government of most states the county has played an important part and continues as an important unit of local government, particularly in rural areas. In only a few states is the county as an agency of rural government surpassed in importance by smaller local units.

The inability of relatively small local units to administer and finance certain functions has been recognized in a number of states. This has resulted in the development of such state functions as police systems and the construction and maintenance of arterial highways. Although such state functions have been developed in part because of the greater efficiency possible in the larger unit, they have resulted in no small measure from the inability of local units to administer and pay for the desired type of services. In some states other functions have been transferred

[1] In Louisiana the unit comparable with the county is called the parish. In some states, cities are independent of the other territorial subdivisions.

to the state, and transfers have been made among local units in an attempt to make possible improved services and increased efficiency. Thus, in some states, highway functions usually performed by small local units have been transferred to the county; or from the county to the state.

Some believe that improved local government will be accomplished primarily by the continued transfer to the state of functions at present administered by local units. Unquestionably, there are instances in which the transfer of additional functions to the state is necessary and desirable. The desire, however, for local control of governmental affairs appears to be so great that there is little likelihood of the complete transfer to the state in the near future of present local functions. It must be recognized, however, that many of the functions that once were primarily of local concern are now of statewide or nationwide importance, and that our concept of the desired services and the best system for administering and paying for such services is necessarily changing.

With the exception of education, in which special conditions prevail, the county is likely, in most states, to be the chief rural unit for the performance of functions of government that are administered locally. In some of the northeastern states, however, the town or township can be expected to continue as an important agency for local administration. Although some counties are too small to perform most local functions efficiently, a large proportion of the population of the country lives within counties that are large enough to function efficiently as organizations for the conduct of the public business.[2] Some system of local government is required, and it seems probable that, in most states, the hope for an improved system of rural government to meet the needs of the future lies in the direction of modification of existing county government.

In the following discussion attention will be called briefly to the problems of improved services and of a more equitable system of taxation as these factors relate to improvement in county government. Consideration will then be given to possible improvements in the administrative organization by which the services of local government are performed. In the examination of possible improvements some of the important reasons necessitating changes will be indicated and the chief proposals for improvement in administrative organization discussed.

[2] Approximately twenty per cent of the population of the United States resides in counties with a population of less than twenty-five thousand.

The Need for Improved Services

One of the greatest needs in many rural communities is for improved governmental services. Better roads and schools particularly are needed. Approximately one-half the farms in New York are located on roads that can be used by automobiles and trucks for only part of the year. The schools of many rural areas are so inadequate as to place children attending them under a handicap in comparison with children in urban areas. Improved public health work and the provision of adequate hospital facilities are also needed. Failure to recognize the need for such increased services, when considering the problems of rural government, is likely to lead to erroneous conclusions concerning future developments.

The Need for an Improved Tax System

If it be assumed that the quantity of services offered by local governments will increase in the future, the problems of an improved system of taxation and of the distribution of revenues between the state and the local units assume additional significance. Unless this added volume of governmental services is to be financed by local property taxation its offering is contingent upon the transfer of such new or improved functions to the state, or upon the further development of state aid to local units.

The property tax has supplied the major part of the revenue for the support of locally-administered governmental functions. It is the only major tax which has been successfully administered by rural units of government. A larger and stronger unit, such as the state, is required for the successful and efficient administration of most other taxes such as those on incomes, on inheritances, and on gasoline and other commodities. The trend appears to be toward the financing of an increasing proportion of the cost of local government from sources other than property.[3] Therefore, it is not likely that expansion of local governmental services in the future will be financed exclusively from property taxation.

There has also been a trend toward the use of revenues from sources other than property to meet the increasing revenue requirements of states.[4] Therefore, it is probable that a large part of the cost of those governmental functions which are transferred from local units to the state will be financed through taxes other than those on property. The prospective changes in the system of paying for governmental services have constituted one of the ar-

[3] Hurd, T. N., Local Government in Tompkins County, New York, Bul. 657, Cornell Univ. Agr. Exp. Sta., 1936.

[4] Report of New York State Commission for the Revision of the Tax Laws, 1932.

guments in favor of the transfer of certain local functions to the state. Such changes in the tax system as a result of the transfer of functions can be expected to continue, but are not likely to supply all of the needed modifications in the tax system.

The trends toward the financing of highways by state gasoline taxes and motor vehicle fees, and toward the collection of income and other relatively new forms of taxes by the state governments are in part the result of attempts to provide a more equitable system of taxation. In New York and a number of other states the newer forms of taxes have entirely displaced the property tax as a source of revenue for general state purposes. Many states have also utilized such revenues for the development of systems of state aid and state-shared revenues for the support of locally-administered functions of government such as schools and highways. In rural areas in New York, for example, such revenues collected by the state and returned to local units average approximately half as much as the local property tax. A further development of such aid is to be expected, particularly if local units are called upon to provide improved services not strictly of local significance. A feature that necessarily accompanies state financial aid to local units is some degree of supervision and control over the expending of such funds. This supervision is not always appreciated by local units, but is consistent with attempts to improve local administration.

The effect on our system of local government of such changes as the transfer of functions to the state and the modification of the tax system has not received full recognition. It is true that, for the most part, the geographic divisions of local government and some aspects of their administration have undergone little change, and that these factors have often been obstacles in the way of improved local government. But, in spite of the relatively small change in these surface features, important progress has been made in the efficiency with which local services are rendered and in the equity with which they are financed. These improvements have come about largely through the transfer of certain functions and through modifications in the tax system, although some important changes in the administration of local government have been made.

Dependence of the County on the State

Counties and townships have been traditionally regarded as administrative subdivisions of the state, although important matters of policy-determination and administration have been exer-

cised locally. Such units have been dependent upon state constitutions and state laws for their governmental powers and, in large part, for their administrative organization. Consequently, in the development of a system of county government to meet the needs of the future, the problems encountered are not the same as they would be if each county could be considered as an independent municipal corporation.

Changes in the units responsible for various functions and the development of improved systems of taxation have been, for the most part, dependent upon collective, statewide, action. In the past, the administrative system under which county government was conducted has also been specified by the state, but there now appears to be a growing concept of county home rule. This has arisen in part because of sentiment for home rule, but also because home rule appears to be a practicable way of attaining improvement in the administrative organization of county government. With home rule, the people of a county can exercise control over their form of government; they do not have to wait until the people of the entire state are convinced of the wisdom of change. The home rule principle as applied to counties may take the form of broad powers to adopt any desired form of local government, or it may be limited to the right to select from one or more forms to be made available by state law.

Why Changes in Administration Are Needed

Why are changes in the administration of local government necessary? Assuming that county government has functioned reasonably well in the past, what developments necessitate change to meet the needs of the present and future? Among the developments that create the necessity for change in administrative organization are the increased volume of business, the need for new and modern services, and the effects of improved transportation and communication facilities.

The volume of business, as measured by expenditures of counties, has increased rapidly, even when allowance is made for changes in the price level. Expenditures of New York counties were more than three times as great in 1932 as in 1921. Present county expenditures are about one hundred times as great as they were a century ago, when many of the features of the present system of administration were developed.[5] Some changes have been introduced to meet the administrative problems created by

[5] Hurd, T. N., Local Government in Tompkins County, New York, Bul. 657, Cornell Univ. Agr. Exp. Sta., 1936.

the increase in expenditures, but in many respects the system reflects the needs of the past rather than of the present or future.

Closely associated with the increased volume of business which local units have been called upon to perform are the demands for improved services. Systems of recording titles to property, tax collection, and police protection, which once were satisfactory, have been rendered obsolete by changing economic and social conditions. Even though the expenditures for such functions have increased, the performance of the service has not always been improved at the desired rate.

Changes in transportation and communication facilities have been associated with the increased volume of business and with the need for improved services. They have made possible improved practices in the performance of such functions as tax collection, but have complicated the provision of police protection and the safeguarding of health. They have made possible an increase in the size of the administrative unit although, because of the increased volume of business, this possible increase in size is not so great as might be assumed.

The form of organization which may have effectively provided a few functions dealing primarily with the administration of justice in sparsely settled areas with poor transportation facilities is not necessarily that best adapted to the provision of a large volume of governmental services, many of which were practically unheard of at the time the administrative system was developed. One would expect the traditional system of county government to be most defective in those areas in which there has been the greatest demand for increased services and in which the volume of business is largest. Indeed, this is true. It is a matter of record that the urban areas with large populations are those in which the strongest demand for modification of the system of county government has arisen.

In contemplating the advantages of a changed system of administrative organization, however, care should be taken not to exaggerate the probable reduction of expenditures. The trend toward improved services seems so pronounced, and the tendency for integrated units of government to supply improved services is so evident, that it is doubtful if a changed administrative system would be accompanied by reduced expenditures. Nevertheless, from the standpoint of citizens and taxpayers, such changes can be justified if they result in improved services, more equitable taxation, and more efficient administration.

Proposals for Improvement in Efficiency

In considering the possibility of improved efficiency in local government the enlargement of the administrative unit, or consolidation of units, has received more attention than most other problems. Although in many instances a larger volume of business is necessary in order to provide efficient administration, the enlargement of the administrative unit alone would increase efficiency in only a small part of the county business. Increased size makes possible certain efficiencies, but in the absence of improved administrative organization, increased size is no guarantee of improvement. The real opportunity for improving efficiency, whether in local units as they now exist or in an enlarged unit, lies in the direction of improved administration.

Indications of the direction in which proposals for administrative reorganization of county government is tending are provided by the optional forms of county government which have been made available by a number of states, or are under consideration in others. These optional forms do not always go so far as is believed desirable by students of government, but they at least indicate the direction of change. For the most part, this demand for improvement in county government has come from urban rather than rural counties, but to a considerable extent the devices that are at present being considered and adopted by urban counties would also meet the needs of rural counties.

In New York, for example, an amendment to the State Constitution, approved in November, 1935, directs the state Legislature to provide alternative optional forms of county government. It is now within the power of the Legislature to provide optional forms of county government including practically all proposals for improvement which have ever received serious consideration. The present system of county government continues until the voters of a county adopt one of the alternative forms. An alternative form becomes effective in a given county only when approved both by the voters of any city with a population of 25 per cent or more of the county, and by the voters outside any such city. The Legislature has already provided some optional forms of county government as a result of this constitutional mandate. More comprehensive forms than those now available are being urged. Such optional forms now available in New York and in several other states have many features in common, and the proposals for further optional or required changes in county government point, for the most part, in the same direction.

The continuation of an elected policy-determining board is incorporated in most proposals for the reorganization of county government. Short of a complete transfer of county functions to the state, it is difficult to conceive of its elimination. Some feel that election of the board at large rather than by districts, as in some states, or the introduction of new forms of representation, would result in improvement. It is impossible to forecast whether or not significant changes in the method of selection of the county board will be made, but it is clear that, under any system of county administration that is devised, it would be difficult or impossible to provide efficient administration unless the policy-determining body is composed of capable, public-spirited individuals and has the confidence of the citizens.

An Executive Head for County Government

Assuming the election of a policy-determining board, probably the most important problem of county administration concerns the methods, practices, or devices by which such a board would exercise control over the administrative affairs of the county. Many elected administrative officials are capable public servants and are sometimes more concerned with efficient county administration than are members of the county board. Nevertheless any thorough-going coordination of county affairs is unlikely if the usual system of electing a large number of administrative officials is continued. If the public does not have confidence in the county board, it may be necessary to continue the election of administrative officials. In so doing, it should be recognized that it is impossible for the county board to exercise the control for which it is held responsible by the people.

The alternative appears to be an appointed or elected county executive. The trend of thought at present appears to be toward an executive appointed by and responsible to the board. Such an executive, sometimes called a county manager, would be responsible for the direction and coordination of all the administrative affairs of the county. He would organize the administrative work of the county, appoint the necessary department heads, and, in addition to his supervisory duties, might also serve as the head of one or more county departments. He would be responsible through his own work and that of his subordinates for the efficient execution of policies determined by the board. Subject to the approval of the board, he would prepare the annual budget, administer the budget, supervise the purchasing of supplies and the auditing of bills, and be responsible for the introduction of

improved business practices. Transfers of functions from smaller local units to the county, and the consolidation or abolition of local units are sometimes proposed along with plans for improved local administration, but these proposals do not necessarily form a fundamental part of the county manager plan.

In a New York county which has recently adopted a limited county manager plan, one of the first tasks undertaken under the new system was a survey of the business offices of the county by accounting experts in order to provide a coordinated and improved set of financial records. It is expected that a county manager or executive would eliminate many inefficiencies and inconsistencies that now exist primarily because no single head or agency is responsible for efficient county administration.

The executive plan in its usual form is not a device for eliminating local control of the governmental affairs of the county. It represents an application to the public business of a principle in almost universal use in private business. Under the appointed executive plan, control is concentrated in the county board through its power of appointing and removing the manager. Under the elected executive plan, the selection of the executive is made by the voters. Either plan should make possible the provision of an improved and coordinated system of administration rather than the present practice of decentralized control by numerous elected administrative officials. It is expected that the county executive would be selected on the basis of his qualifications for the position. The point should not be ignored, however, that under some circumstances it might be possible for the board and the executive to exercise control on a political basis, rather than in the interests of efficiency. But, even admitting this possible shortcoming, the concentration of responsibility should make it possible for citizens to exercise more effective control over county government than at present. It is also possible that application of civil service principles would in large part eliminate possible abuses of the county executive plan.

The county executive plan will probably be developed most rapidly in urban counties where the defects of the present system have been most apparent. A number of such counties have already adopted such a reorganization.[6] The success of the manager plan in city government should contribute to the adoption of the same principle in county government. In practice, the county executive or manager plan may be accepted by degrees rather than in a single reorganization. If counties adopt the principle of the

[6] National Municipal Review, October 1934.

county executive or manager plan, improvement in county administration should result even if some administrative officers continue to be elected.

Other Proposals for Improvement

Improvement in the administration of county government is not entirely dependent upon complete reorganization of the general administration of the county, as is contemplated in the manager plan. Many improved practices could be introduced singly, even though their effectiveness would be greater under a more general reorganization. In fact, changes which have already been put into effect in some counties in New York and in a number of other states, such as better administration of the functions of purchasing and auditing, and improved budgetary procedure, are steps in the direction of the goal contemplated in the county manager plan. Limited changes such as the introduction of an improved practice do not usually raise the cry of loss of local control, which often beclouds the real issues in proposals for widespread reorganization. The introduction of such improved practices, many of which could be accomplished with the cooperation of local officials, is probably an effective method of paving the way for broader changes in the administrative organization.

Among the improved practices, the desirability of which is recognized by many county officials, are a number pertaining particularly to fiscal administration. As already indicated, such possible improvements include purchasing, auditing, and budgetary control. At present in New York, purchasing agents and auditors may be appointed by the county board, and such officials have been appointed in some counties. Several counties have taken steps in the development of adequate budgetary methods. These include the use of the budget to plan county finances, control expenditures, and inform the citizens concerning the financial affairs of the county. Many opportunities exist for the introduction of improved accounting systems, and labor-saving devices such as addressographs and photostating machines.

Local units in many states have lagged in the introduction of businesslike methods of assessment and tax collection. The work of the assessors is extremely difficult. The process of property valuation has not generally been reduced to a scientific basis. In most rural sections of New York, as well as in some other states, maps showing taxable properties are not available. The absence of such maps places assessors at a disadvantage and renders difficult the performance of many functions of local units. Several

counties in New York are interested at the present time in the preparation of such maps for use in increasing the efficiency of local administration.

The possibility of improved practices in the performance of other individual functions such as planning the location of highways, and providing for their construction and maintenance, is recognized. Many progressive steps in the direction of such changes could be taken without over-all reorganization of county government, although in most instances they would be facilitated by such reorganization.

In a number of states improved systems of administration for individual functions have already been provided by state law. Sometimes such systems are required, and sometimes they are optional. In general, local units have been relatively slow to accept optional provisions. Improved systems of administration have been more generally provided for the newer functions of local government than for the older functions. This is because detailed specifications respective to older functions were written into the state constitutions and laws early in the history of the country. In New York, for example, the construction and maintenance of county roads is a relatively new county function. Such work is administered by a county highway superintendent appointed by and responsible to the county board. Qualifications of appointees and terms of office are protected to a considerable extent by civil service regulations. The state also has the power to exercise considerable supervision over the work of these officials by insisting on adequate maintenance programs and through the approval of proposed construction plans. Consequently, the administration of county roads in New York has not been subject to many of the criticisms directed at the system for administering older county functions.

Another method of improving county administration is through the supervision and inspection activities of various departments of the state government. With the increasing importance of state aid and a growing realization of the necessity for efficient administration, it is to be expected that such supervisory powers will increase. Such powers include the auditing of local financial records, the review of budget increases when requested by local citizens, the approval or disapproval of bond issues, and the supervision of various functions. The provision of the services of various specialists in accounting, finance, law, and other fields to provide expert advice for local units is also a state activity closely related to supervision. Such developments are not so far-

reaching as a complete transfer of functions to the state government, but constitute an important development in the gradual march toward improved efficiency. Such activity by the state, however, can not be an adequate substitute for conscientious, capable, and experienced local administrators.

The solution of the governmental problems of many sparsely settled areas is also dependent in part on state action. In areas of very sparse population, it is often impossible to provide, at reasonable cost, modern governmental services such as schools and roads. In part because of recognition of this situation, the state and federal governments have embarked upon programs for the purchase of land better suited to forestry and recreational purposes than to agriculture. The shifting of such land from private to public ownership has many other advantages, and may solve some of the problems of local government heretofore encountered in such areas. A difficult problem will remain, however, as long as it is necessary to provide governmental services for isolated inhabitants.

It is probably impossible or unnecessary in some states for public agencies to purchase all such sparsely settled land. In Wisconsin considerable progress has been made in zoning the most sparsely settled areas against agricultural use.[7] The problem has also been met in part, in some states, by the development of so-called unorganized areas in which the usual forms of local government are not maintained. Under any circumstance, it appears that the problems of sparsely settled areas are distinctive and require special treatment. Sparse settlement is necessarily associated with high costs if modern governmental services are provided. The consolidation of a number of small, sparsely settled units into a large, sparsely settled unit cannot adequately meet this problem, although in some instances savings could be made by increasing the size of unit to take advantage of transportation facilities and increased volume of business.

Some are surprised that acceptance of changed forms of county government has not been more rapid. Consider, however, the issues of local control, centralization, and increased costs that can be raised to complicate the problem. Consider also the absence of objective measures by which the efficiency of a particular local unit or of a system of local government can be indicated. Most citizens are poorly informed concerning the administration and the financing of county government. Until they are well informed

[7] Wehrwein, George S., "Enactment and Administration of Rural County Zoning Ordinances," JOURNAL OF FARM ECONOMICS, August, 1936.

on these matters, it is too much to expect that any large proportion will insist on an improved organization. Something more than the opposition of officeholders retards the reorganization of county government. The best assurance that modifications in county government will be made as the need arises is the education of citizens, taxpayers, and officials, concerning the finances and problems of their government and possible methods of improvement.

FARM LAND VALUES AS AFFECTED BY ROAD TYPE AND DISTANCE[1]

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By changing poorly-surfaced and poorly-drained roads so as to approach the goal of perfect all-weather highways, an economic result is attained for highway users that is analogous to shortening the average distance to trading centers or other destinations. For farms that are dependent on regular daily outlets for products, and that would otherwise be completely marooned for periods of critical length, the economic result of location on or very near hard roads may be analogous to the difference between passing and failing. Distance from farm to town, measured in miles or other units, has long been the object of attention as a factor influencing farm rents and land prices.

European situations have not yet generally afforded to automobiles and trucks opportunities for shrinking farm-to-market distances as markedly as have American situations. It may be pertinent at the outset, therefore, to summarize an analysis made in Germany as to the effect of distance from town upon land utilization in farms, upon net returns from farming, and upon the valuation of farm land.

1. *Road Distances Vital in Old-World Agriculture.*—The German Agricultural Council has been keeping financial and management records for individual farms for varying terms of years.[2] Records for 999 farms for 1927-28 and for 1261 farms for 1928-29 were analyzed for the purpose of ascertaining economic characteristics of farms located at various distances from town.[3]

Per unit of area, farms 6 miles from town had yields of grain 10 per cent less than the closer farms. Milk production per cow showed the same tendency. With price of milk 5 per cent less on the outer farms, milk receipts per cow were still less in relation to those characteristic of the inner farms. For each hectare the output of all farm products was 10 per cent less on the outer than on the inner farms, and the output of farm products requiring transportation showed a corresponding difference of 18 per

[1] "Improved Roads and Land Values," by the same author, is included with papers presented at the Twenty-Third Annual Conference on Highway Engineering held at the University of Illinois, February 26-28, 1936, published as University of Illinois Engineering Experiment Station Circular No. 27 (November 1936), 47-64. A bibliography containing 33 titles is appended. Extensive quotations are included from the paper mentioned.

[2] In 1933, there were 50,000 farms for which record cards were on file in the office of the Deutscher Landwirtschaftsrat.

[3] Padberg, Kurt. "Die Einflusz der Bahnentfernung auf die Landgutswirtschaft." (The Influence of Road Distance upon Farm Business). Berlin, 1931.

cent. In gross income per unit of area the differential was still higher; namely, 21 per cent for all products, this average standing between 14 per cent for the products of cattle keeping, and 27 per cent for field products. Net receipts averaged only one-tenth as high on the outermost as on the innermost farms.

On farms of different sizes there were some differences in the way these tendencies operated. One group of farms averaged about 1075 acres, the second group, 200 acres, and the third group, 70 acres.

A leading land valuation expert of Germany, Dr. Walter Rothkegel, had been applying a rule that net receipts, or net rent, should be estimated to be less by 2 per cent for each additional kilometer of distance from market. The bookkeeping results from the 1927-29 records pointed to a needed reduction of about 5 per cent for each kilometer. The bookkeeping results showed that the approximate rate of reduction was 6½ per cent for small-scale farms as compared with 4½ per cent for large-scale farms. A similar analysis by quality of soil indicates that for soils of medium and poor quality the rate of reduction in net receipts for each unit of distance from town was higher than for good soil.

Allowing for the possibility that the two years chosen for the German study may have shown sharper differentiations between farms close to towns and those more remote than would have been shown in a study including a longer term of years, and allowing for other factors possibly tending on the whole to mitigate the differences, it seems that the differences actually exist as commanding facts in Germany.

In England, in 1910, one English writer[4] summarized certain situations in that country as follows:

"Market towns containing 1000 to 5000 inhabitants generally influence the value of land for a distance of three miles, gradually diminishing from about 30 per cent for that nearest the towns.

"Towns containing 5000 to 50,000 inhabitants affect the value of land for a distance of six miles from 50 per cent downwards according to its proximity.

"Cities and large towns containing more than 50,000 inhabitants increase the value of land within ten miles, that in close proximity being worth 100 per cent more in consequence of its situation."

Writing in 1933, another English specialist[5] says: "The dis-

[4] Bright, Tom. "The Agricultural Valuer's Assistant." p. 5.
[5] Smith, Sydney A. "The Valuation of Land and Houses." p. 53.

tance to the nearest market town or to a railway station will materially affect value. This, perhaps, will have a greater influence on rent than any other feature. Small villages have little, if any, effect; but market towns if not more than a few miles distant, will undoubtedly influence the rent. Land near a town may be worth 50 per cent more than that three or four miles away."

In the older countries where motorization cannot be said yet to have taken much hold, conditions have conspired to favor maintenance of fertility in land near towns. Costs of production and marketing were higher farther out. Net rents of more distant farms were thrust down relatively to those of farms nearer town. Valuations of farm land showed corresponding differentiation.

2. *Road Type and Town Distance as Factors in American Agriculture.*—Tabulation by minor civil divisions of the farm real estate information collected in 1925, 1930, and 1935, reveals that proximity to cities, not only to those of the largest size, but to cities as small as 25,000 population or even smaller, is evidenced by average valuations of farm land and buildings per acre higher than in most minor civil divisions lying midway between population centers.[6] No nation-wide or state-wide analysis has been made in the United States for bringing into the clear the effect of distance from city on a large list of agricultural phenomena, as in the German study to which reference was made.[7] In six states more or less specific studies of this relationship have been reported.

Kentucky

In an investigation, the results of which were published under the title "Influence of a City on Farming,"[8] J. N. Arnold and Frank Montgomery uncovered a number of striking facts relative to the situation of 100 farms in Jefferson County, Kentucky, in 1915. The city which served as the base for measuring road distances of farms was Louisville. Farms within the inner 8-mile zone averaged 102 acres, were deriving 68 per cent of their receipts from truck and potatoes, 10 per cent from dairy, and 22 per cent from other sources, whereas farms 15 miles or more

[6] Duddy, E. A., "Agriculture in the Chicago Region" (University of Chicago Press, 1929), and Stewart, C. L., "Farm Real Estate Valuations in Illinois" (University of Illinois Agricultural Experiment Station Bulletin 399) provide maps for Illinois useful in confirming the observation recorded here.

[7] Galpin, C. J., "Farm Population Associated with Size of Farms; with Value of Farm Land and Buildings; with Mortgaged Owner-Operator Farms; with Location of Farms on Kinds of Roads," may be noted in this connection, especially graphic Figures 11 and 12.

[8] U. S. Department of Agriculture, Bul. 678.

from Louisville averaged 257 acres, and derived 20 per cent of their receipts from truck and potatoes, 27 per cent from dairy and 53 per cent from other sources. Farms at intermediate distances were characterized by figures in corresponding positions. In terms of distance to Louisville, rent of land and valuation of land were as follows: less than 8 miles, $11.85 and $312.00; 9 to 11 miles $5.59 and $110.00; 12 to 14 miles, $5.37 and $106.00; and over 14 miles, $4.66 and $95.00.

New York

Farmers on stone roads in the state of New York reported many changes that they had made because of the type of road.[9] "Some increased the milk production; some changed from manufacturing to Grade B milk; others changed from Grade B to Grade A; some increased the acreage of canning factory and other cash crops; and some increased the amount of poultry kept.

"Other advantages of good roads were that fewer horses had to be kept, and those kept were shod less. Mail was delivered more regularly. Doctors and educational and social facilities were more available. It was easier to keep help. Motor vehicles cost less for maintenance.

"The most important use resulting from stone roads is in the field of marketing."

Indiana

A reference to effect of distance to market upon valuation of farm real estate in Indiana[10] appears in "Factors Determining the Valuation of Farm Real Estate in the United States,"[11] by E. H. Wiecking, presented before the Second International Conference of Agricultural Economists, Cornell University, 1930. "A farm a half-mile from market town averaged about $215 an acre in the area studied. A farm three miles from town, after the influence of other factors affecting value has been eliminated or 'held constant' by statistical means so that only the influence of distance was left, averaged about $198 per acre, or $17 an acre less. A farm nine miles from market averaged about $185 an acre. This was about $30 an acre less than a substantially

[9] Warren and Pearson, "Roads in New York State," Farm Economics No. 57, pp. 1052-3.

[10] According to Black and Black, "The Principles Involved in Farm Land Appraisal Procedure for Loan Purposes," Journal of Land and Public Utility Economics, October, 1926, the Division of Land Economics, Bureau of Agricultural Economics, and the Bureau of Public Roads, United States Department of Agriculture, undertook six studies in cooperation, three in Iowa, two in Indiana, and one in Wisconsin. It appears that formal reports were made for none of these studies. The informal report on Indiana must suffice.

[11] Proceedings, Second International Conference of Agricultural Economists, pp. 1012-24.

similar farm a half-mile from town, and about $13 an acre less than the same kind of farm was worth three miles from town." An additional distance beyond ten miles did not greatly affect the realty valuation.

Illinois

In an Illinois study,[12] Dr. G. L. Jordan found that, in Champaign County, for every mile above the average farther distant from Champaign-Urbana, the influence of all other factors being held constant, the selling price of the farm was reduced 97 cents per acre.

Missouri

In a Missouri study[13] by Dr. C. H. Hammar, distance from local shipping facilities was less noticeable as an influence on land valuations than distance from "a metropolitan or semi-metropolitan" center of population. "The site value influence of the smaller cities and towns extends . . . over short distances only, and even those for St. Louis and Kansas City probably not more than 50 miles. . . . A residual effect on values remains constant even at 40 miles distance (from Kansas City), but from about 25 miles on is so small as to be easily covered up by local influences."

North Dakota

In McKenzie County, North Dakota, a study[14] based on unpublished data of the 1930 census indicated the following:

"The prevalence of the use of the motor truck to market wheat makes it desirable to place the cost of marketing upon that basis. For every mile an ideal forty is distant from the wheat market, a charge of 64 cents is exacted for the marketing of its products. The capitalization of this charge of 64 cents at 5 per cent gives $12.80 as the amount to be deducted from the value of the forty, per mile of distance. If the evaluation of the best land is placed at $20 an acre (or $800 per forty) a deduction of 1.6 per cent of the land value of the ideal forty is deducted for each mile of distance to equalize the market costs.

"It is necessary to provide for a correction in this figure of 1.6 per cent a mile according to the change in the type of farming as the distance from market increases. On the basis of observa-

[12] Factors Affecting the Selling Price of Farm Land, with Special Reference to Champaign County, Illinois, 1913-1927.

[13] "Factors Affecting Farm Land Values in Missouri," Univ. of Mo. Agr. Exp. Sta. Research Bul. 229, pp. 44 and 45.

[14] Kellogg, C. E. and Ableiter, J. K., "A Method of Rural Land Classification," U. S. Dept. of Agr. Tech. Bul. 469, pp. 21-24. See also Kellogg, C. E., "A Method for the Classification of Rural Lands for Assessment in Western North Dakota," Journal of Land and Public Utility Economics (10) 15.

tions in the county, it was assumed that at a distance of 40 miles essentially all the crops produced on the land in the cropping use group will be marketed as livestock. The reduction in value for the ideal grazing lands would amount to 0.5 per cent a mile. As ideal grazing land is here taken to be equivalent to 30 per cent of ideal cropping land, this percentage reduction amounts to 0.15 per cent a mile on the basis of ideal cropping land as 100 per cent."

3. *Importance of Distance from Farm to Hard Road.*—In analyzing factors of road type and distance the usual approach is to consider the type of road on which the farm fronts, and then to consider distance from farm to town, disregarding the proportion of the distance to be covered on the type of road on which the farm fronts, and disregarding also the proportions of the distance covered on types of roads better or worse. Distance from the farm to an all-weather road may be as practical a basis of approach as distance from farm to town, because, except for barriers incident to storms, and for unusually long stretches that require hours to traverse, distance on all-weather roads can be largely disregarded.

Nebraska

Using data collected by the Department of Rural Economics, University of Nebraska, C. W. Walrod, a graduate student in civil engineering, studied 124 farms in Cass County.[15] He found that land values decreased as their distance from the highway increased up to four miles. The difference was about $12.40 per acre per mile or 4 per cent of the land value.

Vermont

Highways in Vermont are classified as "state highways," "state-aid highways," and "town roads." "Farm real estate buyers were apparently willing to pay a premium for location near a state highway when the lands were level and rolling, but not when they were rough.[16] The reduction on both the level and rolling lands as the distance increased from less than a mile to over 8 miles was about $16. Since the rolling lands were valued at a somewhat lower rate than were the level lands, the proportional decrease was somewhat greater than in their case."

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[15] Chatburn, George R., "Highways Lead to Higher Values," Engineering News Record, Jan. 3, 1929, pp. 22-24.

[16] Adams, T. M., "Prices of Vermont Farm Real Estate," pp. 21-22.

New York

In a 1933 study of 274 part-time farms in Rensselaer, Saratoga, Albany, and Schenectady counties, New York,[17] Dr. Kenneth Hood found that "The net appreciation in the value of real estate for the group which bought their property with the buildings already erected ranged from 10.6 per cent for those located on the hard roads to 3.4 per cent for those located one mile or more from a hard-surfaced road. Only one operator in the group which bought land and built was located over one mile from the hard road."

4. *Reported Acre-Value Enhancements from Hard Roads.*—In some of the American studies to which attention will be called in

Years When or For Which Data Were Collected*	Location of Area Studied		Valuation of Land and Buildings in Farms, Assuming Roads Farms Front to Be of Average Type for Area dollars per acre	Added Valuation of Land and Builings Imputed to Hard-surface Roads		Surname of Author
	State	Locality†		dollars per acre	per cent	
1913–27	Ill.	Champaign	$245.94	$18.73	7.6	Jordan
1916–19	Minn.‡	Blue Earth	147.00	21.92	14.9	Haas
1922–23	Pa.	Southeast	124.35	24.50	19.7	Ezekiel
1926	N.Y.	All state	55.20	15.18	27.5	Tennant
1928–33	Vt.	All state	12.00–32.00	0.41–16.25	3–51	Adams
1932	N.Y.	Tompkins	30.65–46.18	6.00—8.00	17–20	Lewis
1935	N.Y.	All state	37.00–47.00	16.00–24.00	43–51	Curtiss
1935	Mo.	Texas	10.16	2.16	20.7	Hammar

* For year when report of study was filed or published, see list of references referred to in footnote 1.
† County, except as otherwise designated.
‡ Another study believed to have additional information for a Minnesota area is an unpublished doctoral dissertation filed at the University of Minnesota in 1930 by C. H. Hammar, and entitled "Farm Incomes and Land Values in the Cut-Over Region of the Great Lakes States."

this paper,[18] there is a tendency for attention to be given to town distance and fronted road type as more or less independent factors. One warrant for not always maintaining an emphasis on town distance is that with the more widespread availability to farmers of all-weather roads suitable to swift movement in truck or automobile, sheer mileage has been losing more and more of its former old-world and new-world significance.

An attempt is made here, by way of introduction, to afford a brief summary of those land price differences reported by Amer-

[17] "Factors Influencing the Appreciation in Real Estate Values of Part-Time Farms," Farm Economics 85, May, 1934.

[18] While the studies included here were all published subsequent to the World War, some students may wish to note the results of road economic studies published in 1916 by the Office of Public Roads, United States Department of Agriculture, and covering information assembled during the years, 1910-1915. These are summarized in Pennybacker, J. E., and Eldredge, M. O., "Economic Surveys of Concrete Highway Improvement." Counties included were as follows: Virginia, Dinwiddie, Lee, Spottsylvania and Wise; New York, Franklin; Mississippi, Lauderdale; Florida, Manatee, and Alabama, Dallas. Summary for these counties in much briefer form is found in Bomberger, F. B., "The Value of Farm Lands in Maryland," and "Change of Value Owing to Good Roads," in Second Biennial Report of the State Tax Commission of Maryland, 1918, pp. 142-147. In Bomberger is also found a discussion of land values near Federalsburg, Maryland, 1912.

ican investigators which represent, in their judgments, the approximate extent of the superiority of hard roads over unimproved roads. Unfortunately, space limitations have resulted in unduly lessened attention to gravel roads in this paper.

In the eight studies[19] which were available to the writer, the increment to the valuation of farm realty imputed to hard surfacing the roads that provide these farms with market outlet was such as to be expressible in percentages from 3 to 51, with considerable concentration between 15 and 30. The general average of prevalent road type could not be expected to be the same from one locality to another. If an attempt were made to express the increments from a dirt-road basis, there would be still wider diversity in the extent to which they are graded, oiled, or otherwise prepared by man or nature so as to be usable under diversified weather conditions. In the Pennsylvania study, for example, the differential in valuation between a dirt-road and a stone-road basis is placed at $32 as compared with $24.50, the amount shown here.

These studies are of sufficient interest to warrant outlining to some extent the methods used and the results obtained.

Pennsylvania

In "Factors Affecting Farmers' Earnings in Southeastern Pennsylvania,"[20] Dr. M. J. B. Ezekiel reported in 1926 the results of a study of farm organization and practice among dairy farmers of the Piedmont Plateau region of the Atlantic coast. The southeastern portion of Chester County, Pennsylvania, was selected as the area.

Types of roads were designated according to a "code" as follows: (1) "state" road, concrete or asphalt; (2) macadam road; (3) broken stone, gravel or slag, water bound; and (4) dirt road. On the average for each increase of one unit of road type index there was a decrease of $6.73 in farm value per acre, and for each increase of a mile in distance from town a decrease of $5.47 per acre.

Deviation from average value per acre, other factors being the same, was shown to be as follows:

Concrete, asphalt, or macadam	Plus	$24.50
Broken stone or gravel	Plus	8.00
Dirt	Minus	6.90

[19] Data collected for three southern Wisconsin and one northern Illinois county for 1924-1925 have recently been subjected to analysis by workers in the Bureau of Agricultural Economics and the Bureau of Public Roads, the agencies instrumental in inauguration of the study. Recent availability of better-adapted methods of statistical approach afford basis for belief that, if published, the results of this study may be of widespread interest.

[20] U. S. Dept. of Agr. Bul. 1400, April 1926.

Deviation from average value per acre, other factors being the same, was shown to be as follows for the various miles distant: 0, plus $8.11; 1, plus $5.20; 2, plus $4.00; 3, minus $4.40; 4, minus $11.70; and 5, minus $13.20.

Minnesota

In "Sale Prices as a Basis for Farm Land Appraisal,"[21] Dr. G. Caspar Haas reports a study of 160 farms sold in Blue Earth County in southern Minnesota in 1916 to 1919. He sought to isolate the influence of the following factors: value of buildings per acre, type of land, crop yields, distance from market, size of adjacent city or village, and type of road upon which located. He determined by simple tabulation that state macadam roads should be assigned an average valuation per acre of $21.92 in excess of dirt roads. Other things equal, the farm 11.5 miles from town was worth $35.92 less than the farm a mile from market.

New York

Two types of Cornell studies deserve attention in dealing with the problems of land valuations and roads. Results of one study are reported by Dr. J. L. Tennant in a bulletin entitled, "The Relationships Between Roads and Agriculture in New York."[22] The field work was done in 1926. Farmers living on hard-surfaced roads were asked to estimate the decrease which they believed would occur in the value of their farms if these were located one mile and three miles from a hard-surfaced road. The median of these estimates was $17.82 for the one-mile radius and $33.75 for the three-mile radius. Farmers on gravel and dirt roads were asked to estimate the increase which would occur in the value of their farms if these roads were hard surfaced. The median increase by which it was estimated valuations per acre would be increased if gravel roads were hard surfaced was $12.50, and if dirt roads were hard surfaced $15.58. The increases estimated as likely to accrue from hard surfacing were higher in sections where land values were already high, but the proportion of increase to value before road improvement held close to 25 per cent.

In a 1935 study entitled "Value of Improved Roads to New York Farmers,"[23] Dr. W. M. Curtiss, Cornell University, states

[21] University of Minnesota Agr. Exp. Sta. Tech. Bul. 9, November, 1922.

[22] Cornell Bul. 479 (May, 1929). The results summarized here are also summarized, with credit to Doctor Tennant, in an article by Professors Warren and Pearson, entitled, "Roads in New York State," Farm Economics, Cornell University, 57 (February, 1929), pp. 1046-1053.

[23] Farm Economics, 92, December, 1935, pp. 2231 and 2237-39.

that "Farmers probably underestimate rather than overestimate the value of new facilities and improvements on their farms. This would be expected for such improvements as telephones, electricity, and improved roads." A questionnaire was sent to farmers, two-thirds of whom, a total of 3365, estimated values of their farms with three different types of roads, dirt, gravel, and hard. The 1047 farmers living on dirt roads estimated their farms were worth $37 per acre. If their roads had been gravel, they estimated the farms would have been worth $45 per acre, or, if hard-surfaced $53 per acre. The 769 farmers located on gravel estimated their farms were worth $55 per acre and would be worth $45 if on dirt and $65 if on hard roads. The 1549 farmers located on hard roads estimated that their farms were worth an average of $71 per acre, and would be worth $57 if on gravel roads and only $47 if on dirt roads.

A second type of study fostered at Cornell is that of Dr. A. B. Lewis, published in April, 1934, under the title, "An Economic Study of Land Utilization in Tompkins County, New York."[24] Within two land classes studied, farm real estate on hard-surfaced roads was valued 19 per cent higher than was land in farms on dirt roads. The increase in full value computed by the author as likely to result from building one mile of hard-surfaced road ranged from $1865 to $2496, according to class of land. Acres per mile of road varied from 322 to 286. Farms averaged from 116 to 134 acres each, and averaged from $30.65 to $46.18 per acre in valuation. Increment per acre imputable to hard surfacing ranged from nearly $6 to nearly $8.

As between the two types of approach that employed by Doctor Lewis showed more conservative results.

Illinois

Dr. G. L. Jordan reported on "Factors Affecting the Selling Price of Farm Land with Special Reference to Champaign County, Illinois, 1913-1927."[25] Using methods substantially the same as those used by Doctor Haas, and applying them to 100 farms, the following data were secured concerning roads: Farms on paved roads showed an average selling price of $18.73 an acre more than those on dirt roads. Those on oiled roads showed a differential of $11.36 over dirt roads.

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[24] Cornell Bulletin 590.
[25] M.S. thesis, unpublished. University of Illinois, 1928.

Ohio

In analyzing the "Effect of Various Factors on Sale Price and Tax Valuation of Farms"[26] H. R. Moore noted that for 340 Ohio farms sold in 1927 and 1928 the sale price per acre for farms bordered by specified road types was as follows: paved, $122; gravel, $95; and earth, $69; and for the same farms classified by miles to local market: 1 mile, $114; 2, $101; 3, $89; 4, $86; 5, $88; 6, $71; and 7 or more, $40.

6. *Summary and Outlook.*—It can be regarded as almost obvious that the effects which improved roads have on farm values in one section of the United States do not necessarily hold good for the other sections of the country.[27] There is reason to suppose that these effects differ from one part of the state or farming-type area to another. There is some basis for believing that road distance and road type have not been critical factors in determining net rents and selling valuations in areas in which grain, hog, and beef cattle production predominate. There is basis for believing that road type and road distance are of critical importance in determining use of land and rents and valuations in areas producing regular market supplies of milk, eggs, and horticultural products.[28] The influence which kind of farm products, size of nearby consumption center, class of shipping point, size of farm, proportion of land within the farm that is level or rough, and adaptable to one crop or flexible as to use, and other factors have had upon the valuation of farm real estate on various kinds of roads and at various distances from all-weather roads and from markets in various parts of the country is not known.[29]

For sound valuation for credit and tax purposes, if for no others, precise and repeated determinations should be made. No finer opportunity is offered in many states than to apply the more refined methods demonstrated to be practical in many of the American studies so that the situation as to road-type increments in land values in various districts may be known to taxing officials

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[26] Forty-Eighth Annual Report (for 1928-1929) Ohio Agricultural Experiment Station Bul. 446, p. 171.

[27] Wiecking, E. H. "The Relationship of Farm Buildings and Improved Roads to Land Values" (address at Univ. of Minn., June, 1928, mimeographed by the U. S. Bureau of Agr. Economics).

[28] Compare Gaddis, P. L., "A Policy for Nebraska Farmers," in part as follows: "The distance from market and the kind of roads over which it is reached are especially important when specialized and perishable crops or products such as milk, potatoes, sugar, beets, and apples must be marketed regularly or at a particular time. Closeness to market is least important to cattlemen and sheepmen who market their product on the hoof."

[29] P. L. Gaddis, "Appraising Farm Lands for Loan Purposes. Annals of Real Estate Practice," V (1927), pp. 209-211. After giving a six-fold classification of farms from the standpoint of roads on which located, Mr. Gaddis outlines rather definite suggestions for an appraiser to allow percentages for road types above the average and for various town distances. He adds, however, as is fitting in the absence of much more research, that the figures given are "suggestive rather than exact as each case must be decided on its own merits."

and assessment supervisors, to appraisers for credit agencies, and other public and private interests.

Hard roads create land-value increments in farms on or near them. To what extent do these increments remain available to those who own the land at the time when the improvements are made and to what extent do stiffened tax assessments keep the actual selling prices from being revised upward sufficiently to attain the maximum figures which such increments would otherwise attain? Is a basis for judging the contribution of road improvement to be found in production and marketing costs and incomes, independently of real estate valuations representative of actual recent sale prices in the same area or in areas with established comparability? Are the more recent stages in the good road development increasing the premiums on land located on or near good roads or reducing them? Are there later stages establishing a discount on land remote from good roads? What is a fair maximum proportion of cost of building hard roads that could be assumed by owners of rural and other real estate in localities served by these roads, consistently with proper sharing of costs with non-local users of the same highways?

Answers to questions such as these require the exertion of many times the amount of coordinated research energy that has thus far been applied to these problems.

TECHNICAL CONDITIONS ARE IMPORTANT FACTORS IN SHORT-TIME MOVEMENTS OF WHEAT PRICES

H. S. IRWIN
COMMODITY EXCHANGE ADMINISTRATION

Although the changes in the average annual price of wheat from one crop year to another correspond closely with the changes in the demand-supply balance, it is evident that within the crop years the changes in price deviate frequently and to a considerable degree from the apparent changes in the demand-supply balance. The explanation of these deviations is that, within the crop years, prices are influenced to a considerable degree by the technical conditions of the futures market as well as by changes in crop prospects, harvests, etc. Usually the effects of the technical conditions cancel out by the end of the crop year, but within the year their influence may contribute to sizeable swings in prices. At times it may outweigh the influence of the fundamental conditions.

The most important technical conditions arise from the participation in the trading of the small traders in the United States and Canada, together with the operations of the professional traders. The small traders are of consequence because of their numbers and their habits of trading. Individually their holdings are quite small. As a rule only a small proportion of them control more than 5,000 bushels each, and many of them have only 1000 or 2000 bushels each. There were, however, probably more than 15,000 small traders (hedgers excluded) in the wheat futures markets of the United States at one time in the autumn of 1934, and in addition there were doubtless many small traders in the Canadian futures markets.[1] As a result, their aggregate effect of their transactions is substantial.

Most of these small traders, perhaps 90 per cent of them, enter the market on the buying side. In certain circumstances there may be a mass movement on their part into the market. Likewise, many of them may close out their holdings at about the same time and in response to the same conditions. Thus their influx into and their exodus from the market may have a material effect upon prices.

[1] There were more than 10,000 non-hedgers with positions in wheat futures on the Chicago Board of Trade at the close of business on September 29, 1934. There is reason to believe that there were more than 5,000 others with positions on the Minneapolis Chamber of Commerce, the Kansas City Board of Trade, and the other contract markets of the United States.

As a rule these small traders enter the market in numbers after harvest and also, though not to the same extent, at times of crop scares. Probably this is especially true of those situated in the wheat-growing areas. In addition, there is nearly always a considerable influx of small traders, both from the country and from the cities, into the market during the final stages of bull markets when trading is excited and prices are advancing sharply. The after-harvest buying of these traders is usually offset or overbalanced by the weight of hedging sales at that time, but at other times their buying tends to push prices upward.[2] It should be noted that crop damage buying is chiefly affected, on the part of country traders, by conditions within the range of their observation.

Commonly the small traders close out their holdings in volume at the approach of the delivery months of the futures in which their contracts are held. Some of them may make new contracts in a more distant future at such times but most of them tend to remain out of the market for a time, especially if they have lost money on their transactions. At times other small traders are forced to close out their long positions because of exhausted margins. Whatever the cause may be, the closing out of a large volume of long contracts usually contributes to declining prices, even though short contracts must be closed out at an equal rate.

The operations of professional traders are important in connection with the influx of the small traders into the futures market and their exit from the market, because the professional traders commonly attempt to "go with the market." That is, they are found on the long side while prices are advancing and on the short side while prices are following a downward trend. As a result they tend to accentuate both the advance and the following decline. These professionals are not numerous but their individual holdings are frequently very large in comparison to those of the average trader. A few of them have held several million bushels each.[3]

As a result of the operations of the small traders together with those of the professionals speculative price cycles occur from

[2] See multigraphed paper by the writer, "Seasonal Tendencies in Wheat Futures prices," p. 11.

[3] With the exception of the hedgers practically all the large traders are professionals although occasionally a large position is accumulated by a wealthy outsider. Examination of the transactions of the professional traders gives little support to the notion entertained in some quarters that these traders are successful because they are expert anticipators of the price levels warranted by existing conditions. There are decided indications instead that their success depends upon trading with the trends of prices. This implies expertness in judging the technical conditions of the market rather than skill in appraising the balance between the demand for and the supply of any grain.

It has been pointed out formerly that it is not the professional traders who take the other side of the hedges after harvest. (See article by the writer "Seasonal Cycles in Aggregates of Wheat Futures Contracts," Journal of Political Economy, XLIII, p. 34. February 1935.)

time to time. Nearly always these cycles have some basis in fundamental conditions, such as damage or the threat of damage to the crop in an area or region, but usually the advance is out of proportion to the extent of the damage. As a result the price is commonly pushed too high so that a decline follows when the support is withdrawn.

Most of the speculative price cycles are comparatively small but some of them are decidedly substantial. Over a period of 40 odd years H. Working found 21 instances of advances of 14 cents or more (on the 1913 price level basis) within a period of five weeks or less which were nearly always followed by nearly equal price declines.[4] It was noticeable that 17 of the 21 occurred, or began, within the period of crop developments in North America.

Most of the cycles which have their beginnings in crop scares can be recognized. Their upward movements in prices are commonly featured by greater than seasonal increases in the volume of trading and also by non-seasonal increases in open contracts which reflect the increased buying. There is no satisfactory method of determining at the beginning of such a cycle how long the upward phase will last nor how high prices will go but as it gets into its final stage there are some indications that the end is approaching. Usually a sharp increase in the volume of trading is a danger sign and so are sharp daily advances in price.[5]

When it is apparent that the peak has been reached and prices have experienced the sharp declines for a few days which commonly follow such a peak, it is possible to predict with a fair degree of certainty that further declines will occur, depending largely upon the periods over which the support of numerous longs will be withdrawn. Such a prediction, of course, is valid only in the absence of important new factors in the situation.

Perhaps the main features of a speculative cycle can be presented to best advantage in one of the outstanding cycles in which they stand out clearly from the other price making influences. For this purpose the cycle of February-July, 1928 may be taken. In

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[4] Wheat Studies VIII: pp. 1 and 19-24, November 1931, Food Research Institute, Stanford University, California.

[5] R. M. Green found that when the trading in wheat futures on any day at such a time equalled 75 per cent or more of the open contracts the price was likely to decline within 30 days. This was true about 75 per cent of the time. (Seasonal and Short-time Fluctuations, etc., Technical Bulletin No. 39, Kansas Agricultural Experiment Station, September 1935.) Sometimes, however, such a day did not occur until a few days before the peak was reached, whereas in other instances it occurred nearly 30 days before the peak. Evidently this finding is akin to the observation that an excited bull market in grain seldom lasts more than a month. Indications are that frequently excited trading and sharp price advances are found together.

Very likely a given percentage is more significant at one time of the year than at another time, because there is a pronounced seasonal cycle in the ratios of open contracts to volumes of trading. On the average, the ratio of the open contracts to the volume of trading is twice as great in January or February as in June. (See article and chart in "Trade in Grain Futures," May 1936. Issued by the Commodity Exchange Administration.)

retrospect it appears as a decided interruption to the declining tendency of wheat prices in the late 1920's. Its net advance of approximately 45 cents was large, although not so great as that in several other cycles in the past 15 years. Its decline did not include a crash as did those of early 1925 and of 1933. Further, its increase in open contracts was not complicated by the after-harvest increase. In it the Chicago July future advanced from a low point of about $1.26 early in February to over $1.70 at the end of April, and then declined to about $1.17 by the end of July.[6] The course of prices and the changes in open contracts during this period are shown in Figure No. 1.

At its outset this cycle, like many other cycles, had its basis in the apprehension concerning new crop prospects for winter wheat in the United States. In addition, there were complaints concerning the condition of the crop in western Europe and increased export and milling activity, according to the Food Research Institute.[7] The extent of the damage in the United States became increasingly apparent during March and contributed to the growth of the speculative interest in wheat prices.

It is noticeable that for nearly two months the advance was gradual and that the daily changes and ranges in price were relatively small. From the low point early in February to the end of March there was a gain of approximately 14 cents with only two days showing advances of two cents or more. In fact, more than three-fifths of the daily advances and seven-tenths of the daily declines were less than a cent. It may be noted also that this advance was in the face of the usual tendency for prices to decline in March.

About the middle of March the aggregates of the open contracts began to show the effects of the buying in the new crop futures and increased gradually for nearly a month. This increase was notable because it went against the strong tendency for the total to decrease in the latter part of March and in April. Usually the decrease in the May future is greater than the increases in the new crop futures during this period. In addition, the volume of trading showed more than the ordinary seasonal increase, beginning about the middle of March and continuing to increase through April and the first few days of May.

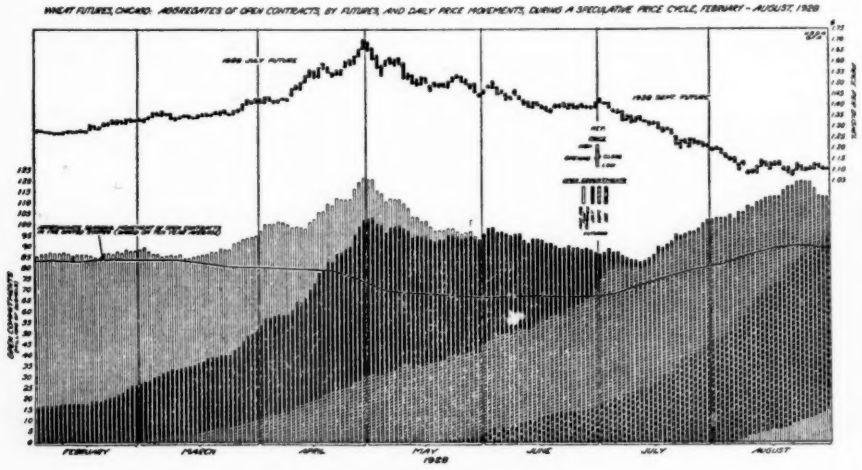
On April 11 a steep advance began, influenced in part by the government crop report which indicated more damage to winter

[6] The July future is used here because there was very little trading in the September future in the early stages of this speculative cycle. Prices continued to decline after the expiration of the July future.

[7] Wheat Studies IV, p. 254, May 1928.

wheat than had been generally expected. During the rest of the month most of the daily advances and price ranges were much larger than in the earlier portion of the upward movement. There were only two daily changes of less than a cent, and 7 out of the 17 were 3 cents and more.

At the outset of this advance some contracts were closed out and the open contracts decreased, but after a few days the increase was resumed, reaching its maximum on April 30 when the price reached its peak. It may be seen that they increased about 23 million bushels in 13 trading days in spite of a considerable decrease in the May future. Indications point strongly



to the conclusion that a great deal of this buying was done by "eleventh-hour bulls" who buy because prices have been advancing rather than because of any reasoned opinion as to the proper price level. It is probable that many of them began to notice the gradual advance in its earlier stages but did not enter the market until prices began to jump and speculative excitement mounted.[8] Most of them, perhaps, center their attention on the fact that if they had bought some time before they would have obtained a profit (on paper) and hasten to buy in order to profit from the further advance which they expect.

At the peak of prices the open contracts in the July future totaled about 71 million bushels in contrast to an average of 38 million bushels for the preceding 4 years. The comparable figure for the September future was 32 million bushels against a

[8] See comments on these traders in "Impressions of Country Trading in Grain Futures" by the writer.

4-year average of 16 million bushels. Likewise the volume of trading had increased sharply. The average daily volume ran as follows:

Week Ending	(In thousands of bushels) Average Daily Volume
March 3	22,138
" 10	32,902
" 17	19,549
" 24	26,143
" 31	38,574
April 7	36,207
" 14	49,210
" 21	66,728
" 28	65,333
May 5	79,715
" 12	53,014
" 19	38,180

Following the peak of the advance, prices declined more than 11 cents in the first three days of May and then entered upon a gradual decline. Part of the decline must be attributed to improvement in crop conditions after April, but part of it also resulted unquestionably from the liquidation which followed the overbuying. Since the overbuying was done in both the July and the September futures, it is to be expected that the liquidation of the resulting long positions would tend toward price weakness.[9] Ordinarily the greatest exodus occurs in the latter half of the month before delivery on contracts in each future, but in this instance the situation was complicated by the exhaustion of margins for numerous longs because of the continued decline.

As a minor point it may be noted that the open contracts decreased very little during the first two days of the decline. Indications are that this was due to the buying of a number of small traders who have been almost ready to enter the market but who have considered the previous advance too steep. When prices drop some of these traders seem to mistake the decline for a recession in price and rush to buy in the hope that the advance will be resumed.

It is evident that in the cycle analyzed the technical conditions of the market had a decided effect upon the course of prices over a period of several months, probably from some time in March to some time in August. In the smaller cycles, the various factors do not stand out so distinctly, but on examination they can be perceived and their effects should be considered.

Certain other tendencies have not been analyzed successfully, but it is highly probable that they result from technical conditions. Chief among these is the "March decline" in wheat prices

[9] Of course the long and the short positions are closed out at an equal rate, but here the longs were the weaker and hence were forced to make price concessions.

which was pointed out by H. Working.[10] Indications are that it results from liquidation on the part of a number of longs in the United States and perhaps in Canada, but a complete explanation has not been offered.

A minor condition which has been analyzed is the tendency for the nearby future to be weaker than the more distant futures in the month prior to deliveries upon its contracts. For instance, the May future is commonly weaker than the July and September futures during April because the longs usually are more anxious than the shorts to close out their holdings before deliveries on the contracts begin.

[10] Wheat Studies X, p. 214, February 1934.

NOTES

COMBINATION OF FACTORS OF DIFFERENT EFFICIENCY

The problems involved in the combination of factors of different efficiency have been touched upon by several writers, notably H. C. Taylor and J. D. Black.[1] It is the purpose of this note to point out certain elements of the analysis which both authors have failed to emphasize, and which it is thought serve to clarify certain features of the problem.

A method of analysis similar to that used by Black and Taylor is followed. The problem is simplified to one of three grades of men and three grades of land. The land is assumed to be owned by non-operators who rent to the other group. Table 1 presents the net returns above outlays which each renter can secure if operating on a piece of land of the designated grade.

TABLE 1. NET RETURNS TO OPERATORS OF DIFFERENT EFFICIENCY IN COMBINATION WITH LANDS OF DIFFERENT GRADE

Case I				Case II				Case III			
Better men are proportionately better on the better grades				Better men have the same absolute difference on all grades				There is a smaller difference between men on the better than on the poorer grades			
Grade of Man	Grade of land a	b	c	Grade of man	Grade of land a	b	c	Grade of man	Grade of land a	b	c
A	32	16	8	A	10	8	6	A	10	8	6
B	16	8	4	B	8	6	4	B	9	6	3
C	8	4	2	C	6	4	2	C	8	4	2

Note that we assume here three separate types of cases, Case I, in which the better men are proportionately better on the better grades, Case II where the better men have the same absolute difference on all grades, and Case III, where there is a smaller difference between the men on the better than on the poorer grades. Previous analysis has dealt largely with Case I only, but it is by no means probable that it is the only type of case.

Let us assume that there are exactly three men, one of each grade, and three pieces of land, one of each grade, and examine some of the familiar propositions in the light of these types of cases. One generally accepted statement is that the largest total product is secured when the better men are on the better land. If we assume for the moment that our data represent gross product, then we see that this is true for Case I where the largest product of 42 is secured with A on a land, B on b land and C on c land. In Case II, however, our total product is 18 under any arrangement we may make of the men, while in Case III the largest product is secured with C on the a land, B on the b land, and A on the c land, just the reverse of the usual statement. Evidently the relative increase in the efficiency of the men as we pass from the poor to the better land is an element in the problem, and a similarity to the problems in comparative advantage may be noted.

[1] Taylor, H. C., "Two Dimensions of Productivity." Vol. VII, No. 1, Supplement to the American Economic Review, March 1917, p. 50 ff.; and Chapter XI of "The Outline of Agricultural Economics." Black, J. D., Ch. 13 of "Introduction to Production Economics."

Returning to our assumption that the data represent net returns to the operator above incurred costs, and also assuming that he must receive some additional return for his own services, and that in order to secure a piece of land from a competing renter he must pay one unit more we may proceed to determine the rents each can pay, the earnings and the grades of land occupied. Following the usual method of analysis in Case I we find A on the a land paying a rent of 13 with an earning of 19, B on the b land paying a rent of 4 with an earning of 4, and C on the c paying a rent of 1 and with an earning of 1.[2] This is precisely the usual analysis, the better men get on the better land and the larger product is divided between the owner of the land and the renter.

If the previous assumptions are retained it makes no difference in Case II on which land the various men are located, either with respect to the total product produced, the total amount paid as rent or the profit made by each individual renter. B can pay 1 more than C for each grade of land and have an earning of 2 while C is making 1, while A can pay 1 more than B and 2 more than C for any grade and have an earning of 3. The rent secured on the various pieces of land will, however, vary according to the grade of man assumed to be operating those pieces. For example, with A on a the rent turns out to be 7, with B on a 6, and with C on a 5. Evidently under these circumstances the owners of land are benefited if the better men are on their land, but to cut their rent by 1 in order to attract these men places the rent on an equal level with that the next lower grade of man could pay.

In Case III it is clearly to the advantage of the better men to rent the poorer land. Thus, we would find A paying a rent of 2 for the c land and earning 4, B paying 4 for the b land and earning 2 and C paying 7 for the a land with an earning of 1. This latter situation probably is an example of a number of combinations which it has been difficult to explain under our usual analysis. For example, why the efficient farmer takes the poor team and the less efficient son uses the good team. Economic forces thus operate to place men on the lands in such a way that the largest total excess over outlays is secured, with the better men securing the larger returns, and a higher rent paid for the better land, but does not always place the more efficient men on the better land. The matter is one of relative rather than absolute efficiencies of combinations.

Thus far it has been assumed that there were the same number of men and pieces of land and one of each grade. Let us now suppose that there are four men, 2 A men and one each of B and C with only 3 pieces of land one of each grade as in Case I. The C men are now forced from the land, and we find the A men on the a and b land and B on the c land. The rents for the land are now 23, 7 and 2 a considerable increase over the previous situation and the excess earnings are now 9 for the A men and 2 for B, a very considerable decrease.[3] Evidently the number of men of a particular grade relative to the amount of land of a particular grade is an important factor in determining the division of product between the

[2] These conclusions are reached by beginning with C and assuming that if he must make at least 1 for himself, he could pay 1 for c and make 1, 3 for b and make 1 and 7 for a and make 1. This sets the minimum level of bidding, and B must pay more for land in order to take it away from c. B can pay 4, one more than C can pay, for b and make 4, or 12 for a and make 4. A can pay 13, one more than B for a and make 19. Subsequent check will show at these rents each to be on the land giving him the largest excess earnings.

[3] C can pay 7, 3 and 1, respectively, and make 1 on each grade. B can pay 14, 6 and 2 and make 2 on each grade. A can pay 23 for a and 7 for b and make 9.

land owner and the renter. In general, the division of product arising from differences in efficiency will favor the relatively scarce efficient factor. If the A men are increased to three, with a B and a C man, the only operators will be A men and the rents will be 28, 12 and 4, respectively, with an earning of 4 for each A man. If there are four A men there are no rewards for greater efficiency and the landlords receive all the excess as rent. Examination of the other cases will yield similar results.

It appears to follow from this analysis that two somewhat neglected factors are of importance in the combination of efficiencies. In the first place, proper combination depends upon the comparative results of combinations in much the same way that comparative advantage determines proper specialization. It may be advantageous to combine a factor of low with one of high efficiency. In the second place, the relative scarcity of the efficient factor is an important determinant of its wage. Here, as elsewhere, relative scarcity adds materially to individual reward.

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THE NATIONAL INCOME, AND WHAT DO WE KNOW ABOUT IT?

There are too many "national income" figures in circulation, and partly on this account it is too difficult for many to know much if anything about our national income. These national income estimates as a rule have distinguishing labels, but few people understand the significance of the different descriptions or differences in labels. As a rule, each is an attempt to measure the national income and the difference in description is an indication of difference in approach and may or may not have great significance in indicating the differences in character of results. Some economists and statisticians argue that we need a variety of approaches and a considerable variety of results, and the problem is such that justification can be found for many different approaches and different estimates. The great variety that has developed, however, leads to confusion. The public should have one clearly defined and clearly labeled estimate of national income for common use. Comparable estimates should be provided annually for a period of years, sufficient for making the comparisons that are usually wanted, and the annual estimates should be maintained currently and fairly closely up to date.

The subdivision or breakdown of a national income estimate should be in terms that are most significant to the public. The estimates should show from year to year changes in the incomes of large social and industrial groups which are commonly considered in relation to each other, such as agriculture, mining, manufacturing, and railroads, also significant changes in income per person by income-size groups.

This leads me to the point of income comparisons. The first requirement to be met is, of course, historical comparability, and the second most important requirement is to secure a fair degree of comparability among income producers or receivers. The work originally undertaken in the Department of Agriculture was primarily for the purpose of developing a measure of historical changes in the economic position of the

farmer that was better than the use of price changes or changes in crop values. The temptation to make comparisons of income received from agriculture with income received from other sources led to the making of some comparisons of changes in wages and payrolls. This brought much criticism, some of which was warranted and some of which went beyond rational considerations.

You are all familiar with the recent developments in the agricultural field involving price and income estimates. To develop the point, let me review briefly the facts. The political struggle for improving the position of agricultural producers in relation to those engaged in other lines of activity inevitably led to attempts to estimate the degree of inequality suffered by agricultural producers or the disparity that existed. The Department of Agriculture refrained from pushing forward income relationships on account of the difficulty of making estimates of income from agriculture and from other sources on a comparable basis and because of the difficulty of rationalizing these relationships. Much was being said and written about price relationships as an indication of purchasing power. First the available indices were used, that is, wholesale prices of agricultural against nonagricultural products. The Bureau constructed an index of prices farmers received for agricultural products and for a time they were compared with the wholesale prices of nonagricultural products. The next step was to set up index numbers of prices of commodities farmers buy, and they were used, accepted by some without question as to their significance, and condemned by a few who usually underrate their value. The Agricultural Adjustment Act simply legalized a procedure which was being publicly used as an indication of the disadvantage of agriculture in the depression. The use of price relationships drew severe criticisms as the prices of farm products were advanced sharply by curtailed production on account of the drought and the Adjustment Program. Now the Soil Conservation and Allotment Act gives us an income parity problem.

The income comparison required by the Soil Conservation Act is on an historical base. It requires reducing to a purchasing power basis the net income per person on farms and the income per person not on farms, in comparison with a pre-war base. This involves the construction of annual income estimates comparable with estimates of the pre-war base period, and a cost-of-living index which represents the change between the present and that base. At present this is looked upon as a great improvement in the basis for measuring the balance of welfare or parity relationships between rural and urban conditions of living. It provides an incentive for improving the estimates both of income and of changes in cost of living. I now predict that before long some other basis of comparison will be required. The pre-war base will be criticized as being too far behind present conditions. What may be considered a more real measure of urban and rural relationships will be sought. I predict that, next year or the year after, we shall be pressed for better measures of real income for both town and country.

It is very difficult to determine purchasing power in terms of real values. Five hundred dollars of income to the man on the farm has a real purchasing power quite different from $500 in income to the man living in the city. And there is the additional problem of valuing goods and services

not directly bought or hired. What values should be placed upon wide open spaces and scenery for the man in the country? He does not place a dollar value upon these things. He may place a dollar value on being close to the store, the post office, schools, and churches, but it is difficult to estimate these values. He is not buying them except by transportation costs to the village. Unquestionably the man in town must have more money to be as well fed as the man in the country. He must have more money to live as townspeople live, but with this he receives more service than does the farmer. The man of the town will pay something in the way of travel to get out into the wide open spaces and to have some of the scenery that the farmer enjoys free. Herein monetary comparisons fall down. Comparisons of relative changes are more valid, but still subject to criticism. The development of good roads, the extension of telephones and electric lines to the country have reduced materially the disadvantages of living in the country in the past few years, in comparison with pre-war years. How can these changes be valued?

Coming back to a consideration of national income, let me offer a few suggestions as a starting point toward clarifying the field of income estimates for the public. Let there be one authoritative estimate of national income provided by a Government agency, with the several Government agencies which are specializing in different fields contributing parts to the estimate of national income. Let the annual national income figure be an estimate of the net value of goods and services produced in the year. In computing this estimate, allowance should be made for maintenance of productive capacity and all duplications of values as between producing agencies should be eliminated. Changes in inventory should be included only in terms of net changes in physical volume, at current values, and shown separately in the breakdown of the estimate of national income. Goods and services for the year not entering into commercial exchange should be valued on the basis of current prices or charges for like goods and services, with due regard to the possibility of maintaining a reasonable degree of comparability through the period of years for which comparisons are most commonly made.

Annual national income estimates should be established for the period 1909 to date because of the frequent use of pre-war comparisons. Provision should be made for current preliminary estimates of national income for the year as early in that year as it is found possible to arrive at a figure that is likely to prove a fairly close approximation to the income of the year. It should be understood that the preliminary estimate is subject to check and revision within the following year; but the series should not be revised frequently beyond the revision of the last preliminary estimate.

Establishing an authoritative annual estimate of national income, simply described and explained to the public, should not stand in the way of continuous research to improve basic elements in the estimates and to interpret or analyze the estimates. Let research workers produce other estimates of national income for special purposes, but label them carefully so as to avoid confusion in the public mind.

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THE NEED FOR AREA INDEX NUMBERS

Several of the recent developments affecting agriculture call for index numbers set up upon an area basis. Outstanding among the agencies which need these index numbers are the AAA and the FCA. We may obtain some notion as to how significant such numbers can be by throwing the available state index numbers of prices received by farmers into a regional grouping such as the one employed by the Federal Census of Agriculture, as in done in Table 1. Altogether thirty states now have such index numbers, the twenty-five which were published by Cornell University in *Farm Economics*, February, 1936, and the following additional states: Massachusetts, Vermont, Washington, Tennessee and Montana.[1] Some of these index numbers are prepared by the economists on the staffs of the land-grant colleges and some by the state statisticians of the crop and

TABLE 1. INDEX NUMBERS OF PRICES RECEIVED BY FARMERS, BY GEOGRAPHIC DIVISIONS, FOR CERTAIN STATES, AND CERTAIN YEARS. SIMPLE AVERAGES OF THE STATE SERIES. (1910-14 = 100)

Geographic Divisions	No. of States Represented	Average 1918–20	Average 1925–29	1930	1931	1932	1933	1934	1935	1936[a]
New England[c]	2	207	164	151	114	94	90	103	112	115
Middle Atlantic	3	204	160	144	108	80	91	100	107	108
E. N. Central	5	206	149	129	90	63	68	84	111	109
W. N. Central	6	211	144	119	80	56	60	82	113	105
S. Atlantic	2	211	141	125	87	68	80	96	105	
E. S. Central	3	222	154	127	82	59	65	86	103	97
W. S. Central	2	226	150	106	67	52	69	94	104	104
Mountain	3	211	145	108	78	67	70	85	100	105
Pacific	3	203	143	122	84	65	72	85	97	100
United States[b]	48	209	147	126	87	65	70	90	108	106

[a] Only eighteen states are represented, and the first five months of the year.
[b] Published currently in *Crops and Markets*, U. S. Department of Agriculture.
[c] The index numbers for Maine are omitted because they are very erratic due to the violence of the fluctuations in potato prices. If index numbers were available for the other five New England states, Maine's should of course be included. The Maine series runs as follows for the years included in the table: 209, 153, 141, 94, 63, 82, 85, 76, 107.

livestock reporting services.[2] Virtually all of them are constructed by the same formula, namely, fixed weights as of same base period. The price data used are for the most part those obtained monthly by the Division of Crop and Livestock Estimates. Not all of the index numbers follow the same procedure in dealing with monthly variations in rates of marketing, and certain other minor differences might be noted; but they are near enough alike for present purposes.

The table shows clearly that the Northeastern states had prices well above the average in 1925-1929, as measured against the 1910-1914 base, whereas almost the whole West was below the average. Even clearer is the more precipitous decline in 1930 and 1931 in the West than in the Northeast. The South, however, had the sharpest drop of all. In 1932, the New England states were 29 points above the average and the two West Central groups 9 and 13 points below it. The East North Central

[1] The writer has recently had occasion to collect information concerning these index numbers in connection with the belated preparation of Bulletin No. 10 in the Scope and Method Series of the Social Science Research Council.
[2] Cornell University has performed a very useful service in stimulating the preparation of these index numbers and actually participating in the work in several cases.

states shared throughout in a small measure in the relatively high prices received in the East because of a common interest in dairying. Of course butter and cheese prices in the Midwest were at no time as high relatively as fluid milk prices in the East.

Most notable of all is the manner in which the regional index numbers converged toward the average after 1932. In 1935, the Eastern states were almost exactly at the average, the North Central states slightly above it, and the Southern states slightly below it. The total range had narrowed from 38 in 1932 to 16 in 1935. The Pacific states had a low index number in 1935 because fruit prices were low.

This narrowing of the range was due in large measure to the effect of the drought on prices of midwestern and western farm products; but production and marketing adjustment and monetary procedures contributed their parts also.

For a full portrayal of differences in amount and direction of change by regions, obviously we must have index numbers of income to take account of such factors as loss of output due to drought; also of the benefit payments received in 1933 to 1935. Such a comparison can be made for gross incomes from the annual estimates published in *Crops and Markets*. These show the West Central region in 1935 down to 50 and 55 per cent of this 1925-1929 average, the dairy and Eastern corn belt regions at 62 to 73 per cent of their parallel averages, and the southern cotton and tobacco regions at 63 to 66 per cent of them. Thus even in spite of benefit payments, most of the West was still lagging in agricultural recovery. The Pacific states averaged 84 per cent of their 1925-1929 averages in spite of low fruit prices.

Even gross incomes are inadequate measures, since they fail to include changing costs of labor, feed and other supplies. The Northeast has paid relatively high prices for many of its expense items since 1921.

The further steps needed in the matter of state index numbers are as follows:

1) the construction of index numbers of physical volume of agricultural production. Several experiment stations have begun working on such a series.
2) the construction of indexes of prices paid by farmers for goods and services bought. Several states already have such a series.
3) the construction of parallel indexes of the physical volume of goods and services bought. Obviously prices alone will not suffice for the expense side of the account
4) from the foregoing, the calculation of state indexes of gross and net incomes.

This may seem a rather pretentious program; but as a matter of fact, most of the data are already available in form for first approximations to such series, and collecting the additional data will not involve any large expenditures.

The final step required is already being taken in several states, namely, the setting up of the index series according to type-of-farming areas. The natural inclination of a department of agricultural economics is merely to break down the state series into subdivisions delimited according to type of farming combinations. Something more than this, however, is

needed, since type-of-farming areas do not follow state boundaries. There should be no difficulty over collaboration between federal and state agencies in securing index series according to any major or minor geographic grouping useful for any purpose.

The Federal Census grouping of states is not very well suited in certain particulars to such a comparison as made in Table 1. The AAA has already found it advisable to recombine two of the southern districts into an East Central and a Southern division, the first including the border states west to the Mississippi. When the state index series in Table 1 are recombined in this way, the comparison at once becomes much more clear-cut and significant, as in Table 2.

TABLE 2. FARM PRICE INDEX NUMBERS OF COTTON AND TOBACCO STATES COMPARED FOR CERTAIN YEARS. (SIMPLE AVERAGES OF STATE SERIES.) (1910-14 = 100)

	Number of States	Average 1925–29	Average 1918–20	1930	1931	1932	1933	1934	1935
Cotton States	3	229	149	106	68	52	68	93	102
Tobacco States	4	213	150	131	87	65	73	90	106

No argument is needed to prove that the AAA needs index series such as the above calculated upon an area basis not only to guide it in applying its procedures to different sections of the country but also to protect itself against constant attack on the ground that this or that section of the country has been ignored or even injured. The FCA must have measures of this kind not only to guide it in its appraisal policies in its several districts, but also as a defense against charges of over- or under-loaning in different areas. Such indexes can be placed in parallel with indexes of farm real estate prices combined according to the same groupings; likewise with parallel indexes of cash rentals.

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FARM MANAGEMENT RESEARCH AND CHANGING PRICE RELATIONSHIPS

Since the beginning of the first farm management studies, farm management investigators have attempted to eliminate the effect of as many as possible of the uncontrollable factors with which they must of necessity work. One of these factors causing much concern has always been that of abnormal farm price relationships. Investigators have attempted to overcome its effect by obtaining quantity data as much as possible so that prices for any period might be substituted for those prevailing at the time the study was being made. However, during recent years more of our farm management data, especially in the corn belt, have been obtained from farm financial records supplemented by additional data where the labor income or rate earned on the investment has been used as the measuring stick. This has usually meant a greater number of records and more extensive information with which to work but less detailed and quantitative data.

During recent years we have also been going through a period of violently changing prices when index numbers and normal price relationships have been stressed. Special emphasis has been given the price relationships existing during the 1910-14 period by the Agricultural Adjustment Administration. The use of so-called normal values by the Farm Credit Administration in calculating land values has further tended to keep to the front the concept of normal prices and normal price relationships.

It is the primary purpose of this discussion to point out the importance of giving consideration to the effect of the changing price relationships on certain farm efficiency factors and other farm management research. Next, a suggested method for overcoming the effect of these changing relationships will be presented, and finally, consideration is given to the value of subjecting farm management data to the test of so-called normal price relationships, both from the standpoint of analysis and of presentation.

A study in Central Indiana may be profitably used to illustrate the effect of changing price relationships on certain farm efficiency factors.

TABLE 1. RELATION OF CROP YIELDS TO LABOR INCOME 1930, 1932, 1934 (871 RECORDS)

	Crop Yield Index	1930	1932	1934
⅕ with highest yields	129	$ 380	$−619	$2156
⅕ with next highest yields	110	256	−504	2066
⅕ with medium yields	100	−48	−616	1589
⅕ with next lowest yields	89	−146	−621	1480
⅕ with lowest yields	72	−112	−400	1100

Farm financial records were obtained on approximately three hundred Central Indiana farms for each of the years 1929 to 1935. In a large number of cases the records were on the same farms during the entire period. Certain customary farm efficiency factors were calculated in the same manner each year. A careful analysis of these factors showed that they were associated with the labor income and rate earned in varying degrees depending upon the year chosen or the price relationship existing. One year a certain factor would be very closely associated with labor income while another year there was little relationship.

For instance, in Table 1 is shown the effect of changing prices on the common factor, crop yields, under three different price relationships. In 1930 grain prices were low compared to livestock prices, but were still on a reasonable level. By 1932 grain prices were so low that the additional cost of obtaining a higher yield was not offset by the additional value of the crop. In 1934 grain prices were high relative to livestock and other farm prices. From the table it may be seen that in 1932 there was little relationship between the crop yields obtained on these groups of farms and the labor income, whereas a moderate relationship existed in 1930 and a very striking relationship in 1934. The farms in 1934 with crop yields 29 per cent above the average made a labor income of $1056 more than those farms having crop yields 28 per cent below average.

While it is recognized that these years represent wide extremes in prices relationships, they do serve to illustrate the influence of varying prices on one type of farm management studies. This influence on other customarily used farm management efficiency factors, such as, value of

crops produced per acre, amount of livestock kept, livestock efficiency, and operating expenses per acre could be similarly shown. It, however, would be a repetition of the situation presented for crop yields.

It is evident that any conclusions drawn from farm financial records obtained during any of these three periods would be different unless price relationships were taken into consideration in some manner. The conclusions, in fact, would tend to vary for any two different periods unless the price factor were considered, for farm price relationships are always changing.

Another type of study might also be cited where a comparison of the power, labor and machinery costs on horse and tractor-horse operated farms was made. Records were obtained on over two hundred horse operated farms and on over two hundred tractor-horse operated farms during each of the four years 1932 to 1935. As indicated in Table 2, the

TABLE 2. LABOR, POWER AND MACHINERY COSTS PER CROP ACRE ON HORSE AND TRACTOR-HORSE[1] OPERATED INDIANA FARMS 1932 TO 1935

	Horse Farms		Tractor Farms[1]	
	No. Farms	Labor, Power & Mach. Cost per Crop Acre on all Farms	No. Farms	Labor, Power & Mach. Cost per Crop Acre on all Farms
1932	248	$6.69	212	$7.47
1933	217	6.72	208	6.72
1934	271	7.69	258	7.30
1935	207	9.24	256	8.33

[1] Farms operated with a tractor and three horses or less.

cost was lower for these three items on the horse farms in 1932. By 1933 they were exactly the same—$6.72 per acre. By 1934 and 1935 they were higher on the horse operated farms, the primary reason being, however, the rise in the feed costs for horses rather than any marked fundamental change in the relative efficiency of the two. Thus, cost study comparisons are influenced where price relationships are extreme.

Other studies seriously influenced by price factors are those attempting to compare the profitableness of different setups such as beef-hog farms with dairy farms. It is extremely difficult to select a period when the price relationships for these two types of farms are normal. Many other types of studies might be cited, especially if either the labor income or the return on the investment is used as the measuring stick.

Then again, there is the constant problem of presenting to farmers the results of farm management studies based on the price relationships existing when the research was made. Farm prices are always changing and the immediate past is a poor indicator for the immediate future. The showing of the relationship existing at the time the study was made, even though attempts are made to explain them, unconsciously sets up in the minds of those studying the results an abnormal picture. Most farmers are already unduly influenced by the conditions prevailing in the immediate past. What needs to be stressed are the results expected under normal price relationships. The disadvantage as pointed out by several writers of selecting a period as far away from the present as 1910-14 is recognized.

In an attempt to rule out the effect of changing prices on the results

of certain farm financial studies, the following procedure was used: Indices were constructed for each commodity sold off the farm, such as, wheat, hogs, wool, and poultry. Indices were likewise constructed for each type of farm expense, such as, hired labor, farm machinery, taxes, and fertilizer. A base period was then selected, such as, 1910-14 or 1924-28. Following this each type of farm receipt and each type of expense for a given farm or group of farms was divided by the index for that item for the year the record was kept on the farm. This increased or decreased each sale or expense to the amount that it would have been had prices existed corresponding to those for the normal or base period assumed. Thus, rather easily, individual farms or groups of farms can be subjected to results at different price levels and relationships.

This method not only has the advantage of being usable when quantity data are not available but also avoids the ruling out of the quality factor when comparing one farm with another. Thus, if hog prices were 100 per cent in the base year and 80 per cent of this during the year in question, the receipts from hogs would be raised to equal 100 per cent. However, if the quality of hogs were low and the price received for them relatively low for the year the record was kept, the amount received from hogs would continue to be correspondingly low when the normal prices were substituted by this method. This same situation would exist for all commodities and expenses involved.

While the error of using normal prices when calculating the national farm income is recognized, this problem is not serious when applied to individual farms or groups of farms. Nationally we seldom get normal prices with either a large or small crop; large crops bring lower than average unit prices while small crops bring higher than average unit prices. The application of normal prices, therefore, tends to increase the national income in years of heavy production beyond what it actually would be and to decrease it below what it actually would be for the years of light production. Individual farm production does not necessarily follow national production. Furthermore, normal production for a farm can usually be obtained with three to five years of records.

Following, in Table 3, is given the farm organization and actual receipts and expenses on a farm for the year 1932. In the right hand column are shown the adjusted receipts and expenses or what they would have been based on 1910-14 parity and raised to the 1925-26 price level. From this it may be seen that this farm actually lacked $2.16 per acre of making any return for the land in 1932. With prices of commodities purchased and sold adjusted to the 1910-14 parity and raised to the 1925-26 price level, it would have returned $18.64 per acre. This assumes that the farm would have been operated in exactly the same manner in each case. This analysis was discussed with the farm operator in 1933, and in 1935 the farm returned over $10.00 per acre.

Another type of farm of 89 acres where dairying and poultry were major enterprises and which had a higher return in 1932 than the one shown indicated only two-thirds as much improvement when the same adjusted prices were applied. When these prices were applied to poorly organized and inefficiently operated farms in 1932, the income continued low, indicating quite clearly that the problem with them was not a question alone of normal price relationships.

Earnings on a group of 250 farms in Central Indiana for the year 1932 were also subjected to this type of analysis. In 1929 this group of farms actually made a return of $7.22 per acre for the land after paying all expenses including depreciation charges and a charge for the operator's labor. In 1932 this return had fallen to a loss of $1.27 per acre. With 1910-14 prices it would have been $7.69 per acre, and at prices based on 1910-14 parity and raised to the 1925-26 price level it would have been $11.01 per acre for the group. Through this procedure it was possible to see how much effect the changing price relationships had on earnings.

TABLE 3. ACTUAL ORGANIZATION, RECEIPTS AND EXPENSES ON A CENTRAL INDIANA FARM FOR 1932 WITH RECEIPTS AND EXPENSES SHOWN WITH ADJUSTED PRICES*

Crops

Crops	Acres	Yield	1932 Sales	Adjusted Price*
Corn-grain	148	60 bu.	$ 666	$2272
Wheat	77	25 bu.	673	2302
Oats	23½	70 bu.	107	369
Soybean seed	50	24 bu.	474	1616
Soybean hay	7	4 T.	60	199
	305½		$1080	$6758

Livestock

Ave No.		1932 Sales	Adjusted Price*
7 horses	Horses	$ 26	$ 78
16 cows, 1 bull	Cattle & Prod.	483	845
19 brood sows, 1 boar	Hogs	1680	5074
83 chickens	Poultry & Eggs	194	332
		$2382	$ 6329
Total cash receipts		$4395	$13,143
Total cash expenses		2722	4,004
Net cash income		$1673	$ 9,139
Farm income		$−139	$ 8,275
Labor income		$−1817	$ 6,283
Rate earned—per cent		−1.6	18.9
Return for land per acre		$−2.16	$18.64

* Adjusted price based on 1910–14 parity and raised to 1925–26 price level.

By this method a group of farms or an individual farm may be subjected to the test of earnings at various price levels and with various price relationships. It becomes possible to compare earnings on farms in different areas and for different years, especially if crop conditions are somewhat similar. An average of a three to five year period usually gives somewhat representative climatic conditions.

While it is recognized that there are various secular trends in the prices of the major farm products, they are slight when compared to the cyclical and the yearly fluctuations. This was indicated by a study of the average relationship of the prices of the major Indiana farm products during the 24 year period, 1910 to 1933. There have been many fluctuations from the average during the period; however, the price relationships have generally come back to a point somewhere near the

average. Warren and Pearson have shown that there has been practically no change between the purchasing power of corn or wheat during the past 100 years. Thus, the ruling out of the price factor makes it possible to reduce one of the two greatest variables in farm management research.

Many people have become accustomed to thinking of price relationships existing during a certain period, such as 1910-14. For this reason the presentation of the income on given types of farms with these recognized prices means more to the public. It tends to simplify the presentation of farm management studies in the same manner that index numbers assist in simplifying comparison of prices in different periods and for different commodities.

Conclusions

This discussion may be briefly summarized by three statements: (1) That varying price levels and price relationships do present a problem in many farm management studies, especially where the farm income is used as a measure; (2) That the increased emphasis placed on the so-called normal price periods makes their use more practical in farm management studies; and (3) That while it is recognized any departure from the prices existing when a study is made is a dangerous procedure, the subjecting of farm management data to the test of prices existing in the so-called normal price periods by the method described is a desirable procedure from the standpoints of both analysis and presentation.

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DO PRESENT TRENDS IN THE TEACHING OF ECONOMICS JEOPARDIZE THE FUTURE VALUE OF RESEARCH?

During the past few years many teachers of economics have been hard pressed to find suitable material for a well rounded course. Most of the departments of economics in our colleges have been deluged with numerous publications purported to be economic texts, but many such books and manuscripts have fallen far short of being suitable as good material for a fundamental course. A beginning course in any field should be designed so as to bring into use and practice in related subjects in the field some of the principles upon which the science is based and upon which it has won a place in the curriculum. Many of the recent books have been but mere histories of events which have transpired in the realm of business during the period since the World War. In some of these texts the assumption is made, directly or indirectly, that what occurred in business previous to the World War has little or no bearing upon our present day problems. A close scrutiny of some of these discussions will reveal a plan to discard well established economic doctrines, while others are what one would term mere propaganda for this or that pet economic theory. Because of the trend of thought in these treatises some economists, who possess the ability to write a clear-cut text which would explain the operation of our economic system in a straightforward fashion, hesitate to do so. As a consequence there has been a scarcity of new or revised up-to-date fundamental texts. The shares of distribution, the laws of costs, demand,

supply and price, which are some of the essentials of a good text, seem to be forgotten in the mad rush to popularize the science. The teacher's choice then lies between being up-to-date, teaching so-called popular economics, or being old-fashioned and sticking to the fundamentals, based upon the wants of man and his activities in attempting to satisfy these wants.

Certainly no one would be so bold as to presume that there is nothing new in economics; nor would any one care to contend that what is new is all wrong and only that which is old in any science is all that can be trusted. It is, however, a firm belief that teachers of economics have gone through and are perhaps still in the throes of a critical period in the science of economics. The choosing of the wrong road may lead to the undermining of the worth while things which should flow from future study and research in the field. It would seem that the ideal path to follow which would protect the future of the science would be to explain thoroughly the economic side of human endeavor. Therefore emphasis should be given to those fundamental principles of the science which have been the means in the past of accomplishing a most useful purpose.

No one can devise an accurate rule for the measurement of wages upon which every worker will agree that his or her wages are fair and just. No one can devise a measure of prices which will at all times be fair to each and every producer and consumer. The solution of these things lies in the future and will depend a great deal upon man's future actions. However, some contribution can be made that will help in such analyses by the teacher of economics. If the things which have affected wages and prices in the past are known and are clearly and logically explained, it would go a long way toward solving or alleviating our price and wage problems. The teacher who has been guilty of carelessness in leading his pupils into wrong ways of economic thinking may in the future be indicted for undermining the science. This road of least resistance has since the beginning of science been strewn with the wreckage of many worn-out economic theories and such a condition may occur once more. There is no doubt but that it may be less exacting to discuss these catchy theories than it is to analyze the laws of rent and interest, but it is difficult to substitute for or set aside fundamental laws.

Students entering a course in economics for the first time are confronted with certain difficulties. The subject matter deals with things of every day life and business. In teaching the subject the instructor employs terms which are used in every day life and business, yet the common application of these terms will hardly satisfy the demands of economic precision. It is here that the teacher will find himself inclined to slip along the easy road which leads to popularity rather than demand a thoroughgoing analysis of terms which will maintain the dignity of the study. It is, of course, conceded that there are, and always will be, disagreements among economists as to exactness with reference to the application of certain economic laws. There are also disagreements among scientists in other fields as to degree of exactness of certain laws in their fields. Yet such disagreements are no excuse for the instructor to slacken his insistence that students get the fundamentals.

Many students also enter a course in economics with certain definite prejudices and preconceived notions. It is doubtful if there is any other

subject taught in our schools about which the student, as well as the general public, have more definite ideas of their own. The home environment, the radio and the press, all serve as mediums to instill certain notions into their minds. Consciously or unconsciously many of us have allowed some speaker or some newspaper article to convince us on some subject relative to the operation of the economic machine. Should the instructor dare to challenge these notions or prejudices it is to shake the very foundation of the individual's faith in the correctness of his reasoning. Thus the instructor who conscientiously takes such a stand may find himself becoming unpopular. The student or the man on the street would hesitate to challenge the chemist or the botanist with regard to their interpretations of the laws of nature, but let the economist dare to defend some law of economics and he is quickly challenged unless the interpretation happens to fit the hearer's particular frame of mind. Under such conditions unusual care and patience must be employed by the instructor in the classroom in order to divert the mind of the student away from these false impressions so that he may proceed to a correct and logical analysis of his future problems.

To add to the predicament of the instructor in economics some prominent members of the profession advocate certain economic doctrines which appear to come from their own personal viewpoints. It would be unjust to accuse these men of self-aggrandizement or that they are advocating such doctrines in the hope of a personal reward. Yet when one views their works he cannot but feel that they have been blinded by their own importance or are seeing through the glass dimly because it is in their interest to do so. Just recently an article appeared quoting a prominent economist as stating that there exists in reality two economic systems. One system where the small business man is subjected to ruthless competition and where there is little or no control over supply and demand. In the other system such competition was being restrained by the duress of the government. The inference of the article seemed to be: here we have two separate antagonistic economic systems working side by side. The one takes care of itself and is for the poor; the other is taken care of and is for the rich. Such a situation is as hard to conceive as it would be to think of two laws of gravity each working in an antagonistic manner to the other. Yet this is an example of some of the ideas which are being voiced at the present time. Again, it would appear that one of the important duties of many present day governments is to aid and succor some special class or group. It is true that much of this aid is given under the guise of assisting society as a whole. In many cases, however, such assistance is a curtain behind which some special favoritism may be allowed to exist.

In the organization and presentation of any subject the teacher must stand or fall on his own program. It is he who must decide what is worth while and what to discard. After all the issue of what constitutes the fundamentals of any subject rests with those who are teaching the subject. How many times in the past few years have you seen the basic principles of the science flouted. Many pleas have been made to discard the musty anemic laws that, on the surface, appear to have disappeared with the new era. Again, if problems of current economic society are to be discussed, the discussion must be carried out in popular terms and of course

in the particular manner to suit one's listeners. On the other hand, pause and consider the future rewards that may be forthcoming as a gain to sound research and sound economic science if one dares to stick to the basic laws of the science.

Perhaps much of the confusion that is so prevalent today in the subject of economics is a lack of a clear distinction between principles and problems. Principles are certain laws which have stood the test of time, a source from which the science proceeds. Problems are mere perplexing happenings from time to time and are more or less fleeting, but for a period may affect some or all of society favorably or adversely. In many discussions it is difficult to distinguish between principles and problems. Problems of society cannot be solved immediately but should be subjected to sound methodical research. If future problems of economics are to be solved properly we should look to a sound basis of principles in the present. Due to some people's eagerness to have their problems solved immediately and perhaps also to introduce the spectacular, they advocate the destruction of the old and substitution of the new. They are loath to use the tried and true principles that have been proven by constant use. Much of the confusion and babble could be avoided if a clearer distinction were made between principles and problems.

There are those economists who are convinced that we must apply economic principles in order to solve economic problems. These men are of the opinion that a thorough understanding of economic principles is a necessity if the reputation of economic research is to be maintained. There is another group in the field who, although they do not voice their opinions openly, believe that altogether too much stress has been given to research and as a result the foundations of the science may be in danger. Is it not high time that the teacher be given recognition along with the research worker, thus encouraging a better job of teaching in order that we may have a better type of research?

Research is the essential element in the solution of economic problems. In the use of research an intelligent assembling, interpretation and dissemination of facts are necessary if the problems are to be solved. Many of the positions calling for economists stress the importance of research above that of instruction. It is important that economists who have the welfare of our science at heart should be concerned more about how the subject is being carried to the present generation. In the opinion of the writer the entire value of future research to society rests in large part upon the present type of instruction. Surely this value is of more importance than the tons and tons of material that are being issued under the guise of research.

Perhaps the fears expressed in this article are without foundation. But how can we protect and build our science unless some call attention to the things that appear to exist? The foundation of economics is being assailed and is in danger of being sacrificed on the altar of new trends in economic thought. This trend can and will be corrected so that economics will eventually again take its place as a member of the brotherhood of sciences. The revival, however, should begin in the classroom and extend into the research laboratory.

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SOME EFFECTS OF MAINTAINING RETAIL PRICES OF WHOLE MILK AT ARTIFICIAL LEVELS[1]

This study was made to determine the extent to which retail prices of whole milk in the United States, New York City, Boston, Chicago and Connecticut had been maintained at artificial levels from 1913 to 1935 and the effect of such control upon the consumption of whole milk. It was found that from the latter part of 1915 to the middle of 1920 retail prices of whole milk lagged behind retail prices of "all foods," an index that can properly be considered a measure of effective competition, since retail prices of most foods are highly competitive. This would seem to indicate control of retail prices of whole milk during that period. Had effective competition prevailed during that period retail prices of whole milk would in all probability have risen as rapidly as prices of "all foods."

The principal reason that retail prices of whole milk were controlled from 1915 to 1920 was the difficulty encountered by distributors in attempting to accustom consumers to an increased price of whole milk following several years during which milk prices in many large markets remained unchanged. This in turn prevented a rise in prices to milk producers in line with rising feed and labor costs. In sharp contrast to controlled prices of whole milk from 1915 to 1920, was the flexible condition of retail prices of whole milk from 1920 to 1922, when retail prices of whole milk fell at about the same rate as retail prices of "all foods." An underlying influence tending toward declines in retail prices of "all foods" and of whole milk at that time was the marked decline in the purchasing power of consumers as measured by factory payrolls.

From 1930 to 1933 the index of retail prices of whole milk (1921-1929=100) declined less relatively and absolutely than prices of "all foods." During that period retail prices of evaporated milk, the most direct competitor of whole milk, declined even more rapidly than did retail prices of "all foods." One of the causes for the exceedingly low prices that prevailed for evaporated milk during that period was the flow of milk to surplus uses resulting from decreased consumption of whole milk.

From 1933 to the latter part of 1934, retail prices of whole milk increased about as rapidly as retail prices of "all foods," thereby indicating a continuance of the control of these prices which existed from 1930 to 1933. In certain markets price increases in 1933 and 1934 were due to the operations of federal and state milk control agencies.

Price control during these three periods was not uniform throughout all milk markets. In some markets prices were found at a competitive level during periods when for many markets and for the country as a whole retail prices of whole milk were maintained at artificial levels.

Masses of consumers are influenced in their buying practices more by price than by any other factor. This is particularly true in times when purchasing power is unusually low. Hence it is not surprising that when price spreads widen between two competing foods, consumers purchase the foods they think are the cheapest. Evaporated milk is the most direct competitor of whole milk. Consequently changes in consumption of that product indicate what consumer reactions are to retail prices of whole milk

[1] Prices at artificial levels are prices which through some agency are maintained higher or lower than their competitive economic levels. In other words, artificially high prices are those maintained at levels higher than their competitive levels, and artificially low prices are those maintained lower than their economic levels.

as compared with retail prices of evaporated milk. Consumers buy more canned milk when retail prices of whole milk are high compared with retail prices of condensed and evaporated milk and buy less canned milk when whole milk is relatively cheap. Changes in the spread between retail prices of whole milk and retail prices of evaporated milk tend to be quickly reflected in changes in consumption of canned milk.

A specific example of this is shown from the middle of 1933 to 1934 when whole milk prices advanced much more rapidly than prices of canned milk. The price spread between whole and canned milk increased from 3.8 cents in 1933 to 4.7 cents in 1934, or a net increase of 24 per cent. In this same period consumption of canned milk increased from 143 million pounds to 168 million pounds per month, a net increase of 17.5 per cent.

Consumption of canned milk in Connecticut in 1935 had increased to nearly double that of the early part of 1930. This was caused primarily by high retail prices of whole milk in Connecticut as compared with those for the United States as a whole. Further evidence of this situation is indicated by the fact that the increase in consumption of canned milk in Connecticut has been much more rapid in the past few years than for the country as a whole.

From 1929 to 1932, the keen store competition in Boston and New York City tended to prevent substantial losses in whole milk sales as compared with Philadelphia, where, during that period, store prices were held at substantially the same level as wagon prices. The difference in changes in purchasing power of consumers in these different cities from 1929 to 1932 was not an important cause for the greater loss in milk sales in Philadelphia during that period.

In sharp contrast to the downward movement of milk sales in Philadelphia from 1929 to 1932, there has been a distinctly upward movement of milk sales in that city from the latter part of 1932 to 1935. The underlying reason for this increase in milk sales was the low retail prices of whole milk which prevailed in that city during that period as a whole. The retail delivered price of whole milk of 11 cents per quart which was put into effect in the summer of 1933 has been maintained at that level since that time. During that period there was a substantial increase in the purchasing power of consumers in Philadelphia.

The continued decline in milk sales in New York City from 1933 to 1935 can be attributed principally to (1) the prohibition of dipped milk sales, (2) the large increase in retail delivered prices of whole milk, (3) the raising of the general level of retail prices of whole milk sold through stores by the New York State Milk Control Board, and (4) a slight decline in population of New York City.

From 1933 to 1935 milk sales in Boston have tended to respond quickly to changes in retail prices of whole milk. From the middle of 1934 to the middle of 1935 milk sales in Boston have been declining, following the increase in price from 11 to 13 cents per quart in this city. During that period organized attempts resulted in maintaining store prices at levels higher than would have prevailed had these attempts not been made.

High retail prices of whole milk in addition to causing increased consumption of canned milk, and tending to reduce whole milk sales, also encourage new distributing agencies to enter a milk market. Chicago is one of the best examples of a market where new distributing agencies

have commenced to distribute milk as a result of high retail prices. From 1930 to 1932, retail prices of whole milk were very high in relation to prices of "all foods," of evaporated milk, and of other competing food products in that city. Each price increase in that market from October 1933 to June 1935, was followed by a marked decrease in milk sales of organized dealers. The loss in sales was due primarily to a shift of milk sales to retail stores and milk vendors rather than to loss in consumption of milk.

Losses of milk sales of the larger distributors in the majority of the smaller milk markets of the United States which maintained retail prices of whole milk at artificially high levels have been accompanied by large increases in the number of producer-distributors. Connecticut cities furnish good examples of markets where there have been large increases in the number of producer-distributors in recent years.

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Abstract of Doctoral Thesis, University of Illinois 1935.

THE RELATION OF AAA REDUCTIONS TO GOLD PRICES AND PURCHASING POWER OF COTTON[1]

There appears to be a need for some carefully conducted price analysis before the effect of reductions under the AAA on prices can be withdrawn from the realm of controversy and theoretical speculation. Even a rather hasty and incomplete comparison of prices, gold prices and index numbers of purchasing power reveal some rather startling errors in current literature on this subject. There appear to be two points of controversy, (1) the effect of reduction on prices and gross income; (2) the effect of the processing tax on prices and gross income. These two aspects cannot be separated for analysis but in this paper the emphasis will be upon the former and not the latter.

Gold Prices of Cotton: Dr. C. F. Warren states in the JOURNAL OF FARM ECONOMICS for February, 1936, "I have seen no adequate study of the effect of the subsequent cotton program on cotton prices, but it is interesting to note that the gold value of the total crop declined." A footnote gives as authority for this statement, Cox, A.B., "The Cotton Situation Approaches a Crisis." This statement by Dr. Cox with respect to gold prices is incorrect, largely because of the base used for comparison. The gold price of cotton at Havre, France for August, 1935 is used in comparison with August gold prices for 1933 and 1934 to arrive at a conclusion that gold prices did not rise during the control period.

Dr. Cox's figures are as follows:

August, 1935— 902 grains of gold per bale
August, 1934—1028 grains of gold per bale
August, 1933— 928 grains of gold per bale
August, 1932— 928 grains of gold per bale

To conclude that gold prices did not rise because August, 1935 showed 26 grains less per bale than August, 1932 and 1933 while August, 1934 was 100 grains higher seems to be partly at least an error in observation;

[1] This constitutes the first part of a paper delivered at the Annual Meeting of the Western Farm Economics Association, August 1, 1936. The remainder of the paper dealt with wheat. The entire paper was mimeographed and will appear in the 1936 Proceedings of the Western Farm Economics Association. Separate copies can be obtained without cost from the author.

moreover, it can be questioned from the point of view of using one month each year as a measure of changes in gold prices. For instance, August and September of 1935 taken together were the low gold price points of 1935 and they also averaged less than the gold prices of all months of 1934 and the average of the last eight months of 1933. The average gold price for all months of 1935 was 1.703[2] ounces per bale at New York as compared to 1.552 ounces for 1932, 1.644 ounces for 1933 and 1.774 ounces for 1934. There certainly was a definite increase in gold prices during the control period even if 1934 was somewhat higher than 1935. These years cover most of the period when cotton reductions took effect on market supplies.

What base period is perhaps the best measure for determining the percentage increases in gold prices? If the gold value of a bale of cotton for the calendar year 1932 of 1.552 ounces is taken as a suitable base (prior to the reduction of the gold content of the dollar) we find an increase in the gold prices of cotton of six per cent in 1933 and of fourteen per cent in 1934, also of ten per cent in 1935. If the first four months of 1933 just prior to dollar devaluation are used as a base, an increase of 10 per cent in gold prices is shown for the last eight months of 1933, and a 13 per cent increase for 1934. The increase for 1935 was 9 per cent. To say that the gold value of cotton did not increase is an error of no small importance.[3] Certainly an increase of from 9 to 13 per cent is not negligible when the percentage reduction of the world supply of cotton accounted for by the AAA was only 14.5 per cent of the prospective potential world crop for the two years, 1933 and 1934. These figures suggest the normal relationship between supply and price.

The erroneous conclusions drawn from a misinterpretation of the trend of gold prices are augmented by a neglect of the fluctuation in the purchasing power of gold.

Purchasing Power of Gold: To conclude that this increase in gold prices was the only advantage obtained during this period is to ignore the fact that gold is also a commodity which fluctuates in terms of purchasing power.[4] If Table 4, page 21 of *Gold and Prices* by Warren and Pearson is referred to, it is found that gold did increase in purchasing power. This increase was measured in terms of 30 basic commodities in the United States. The same increase occurred in raw materials in five countries as shown in *Farm Economics*. The increase in purchasing power of gold during 1933 and 1934 is more strikingly illustrated on page 15 of *Gold and Prices* of Warren and Pearson. These figures deal in wholesale prices of all commodities in the United States. It appears, therefore, that the conclusion with respect to the increased purchasing power of cotton is inevitable. Cotton gained in gold value, at the same time that gold gained in purchasing power, not only in basic world commodities which reflect

[2] See Table 9, page 191 of *Gold and Prices* by Warren and Pearson.

[3] Trimble B. Hedges in the February number of *Current Farm Economics* for Oklahoma on page 27 does not in the opinion of the writer use a base which pictures fairly the rise of cotton in gold prices. He refers back to the 1932-33 crop season as a base. This base includes August and September of 1932 which were the high months in gold prices for that year. This base period also includes the abortive speculative boom of the mid-summer of 1933. Furthermore, during these summer months, the cotton plow-up campaign was anticipated and put under way. Current prices in gold during the summer, no doubt, reflected this program. All these factors make the 1932-33 crop season a very questionable value as a measure of the rise in the gold price of cotton.

[4] "Farm Prices and the Value of Gold" by John R. Commons in *The North American Review*, January and February, 1928.

world gold prices almost immediately, but also in all commodities at wholesale prices in the United States. Though all commodity wholesale groups may increase slowly later, this does not change the fact that in 1933 and 1934 and part of 1935 the opposite trend was apparent.[5] In any adequate measure of the influence of cotton reduction on gross purchasing power, this fact must not be overlooked. Purchasing power here is taken as being synonymous with greater real income for cotton growers.

The following figures are extracts from Table 4 on page 21 of *Gold and Prices* which shows index numbers of the wholesale prices of 30 basic commodities in the United States in gold for 1933 and 1934, and from *Farm Economics* of Cornell University from which has been taken the index of raw materials in five countries in gold for 1932 and for 1935. These two indexes run along together and are comparable enough for the use here made.

1910-14 = 100

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1932	—	—	—	—	—	—	—	—	—	—	—	—	72
1933	68	66	68	68	69	71	70	71	65	64	59	60	66
1934	60	59	59	59	59	59	59	63	65	64	64	64	61
1935	—	62	61	63	63	63	63	63	64	64	64	65	63

If the first four months of 1933 are used as a base period, we find an index of gold prices of 30 basic commodities to average 68 and for the remaining eight months of the year the average is 66. This would indicate no marked change. But, there was an increase in the index numbers until August (the 1933 midsummer devaluation boom) after which a sharp decline occurred to a point of 59 in November of that year. This decline indicates an increased purchasing power of gold of about 15 per cent. This purchasing power of gold was maintained until August, 1934 when the purchasing power declined to 7 per cent over the base period. If all months of 1934 are averaged the increase would be 8 per cent over the base period. Early in 1935 gold increased in purchasing power again but receded toward the end of the year. The average for 1935 was an 8 per cent increase, but for the month of March this increase equaled 11 per cent. If the 1932 average index of gold of 72 were to be used as a base, the increases in the purchasing power of gold would be pushed up another 6 per cent in each example cited. To be conservative in these comparisons the first four months of 1933 seems to be a desirable base. Dealers and growers were not aware at this time of any program to control production. It does not matter much, however, which base is chosen; the facts are that gold continued to gain in purchasing power for some time after April, 1933, and any good which held the same price in gold or increased in gold was most assuredly going upward in purchasing power. For cotton the increased purchasing power of gold tended to obscure a considerable advance in the purchasing power during a large part of the controlled period. It is well to emphasize again that this advance is here being measured in basic commodities which quickly reflect changes in gold prices in the world markets. This increase in purchasing power cannot therefore be said to be due to a lag in gold price adjustments which occur in a period of reflation or dollar devaluation.

Purchasing Power of Cotton: The cotton producers like all other producers are primarily interested in what their products will exchange for in

[5] See Warren and Pearson, *Gold and Prices*, page 15.

goods which they ordinarily buy. The gold index of 30 basic commodities in the United States during the last two months of 1933 and the first seven months of 1934 show an increase in gold purchasing power of 15 per cent over the first four months of 1933. For any good which did not change in its gold exchange value, this increase in purchasing power also applied. But the gold value of cotton did increase in New York 8 per cent during these nine months over and above the gold value for the base period cited above. These two variations made an increase in purchasing power of cotton of 15 per cent plus 8 per cent or a total of 23 per cent. If the same measures are used for the last eight months of the year, 1933, the increase is 10 per cent. The average increase for the full year, 1934, compared to the base period is an increase in purchasing power of 21 per cent, the increase in prices of cotton in gold at New York accounting for 13 per cent and the increase in purchasing power of gold an additional 8 per cent. These figures prove that cotton enjoyed an increase of purchasing power for the whole period from May, 1933 up to the end of 1935. The measure used in arriving at these conclusions is gold and not the United States dollar.

Even though it is known that the lag in price adjustments affects the gold prices of all commodity indexes, it is worth mentioning that the increased purchasing power of cotton in all commodity wholesale prices in terms of gold (not dollars) was 46 per cent as compared to 21 per cent for basic commodities for the year 1934. In terms of purchasing power of devalued dollars for all commodities the increase was much greater than either of these percentages.

One other factor should be pointed out to demonstrate the conservative nature of the above figures on increased purchasing power for cotton. All price comparisons have been based upon middling spot cotton at New York. If the ginning, shipping, financing, and handling charges are deducted to give the grower's price, the percentage increase would be considerably magnified. These magnified increases are those which the cotton growers actually received.

Increased Purchasing Power and Cotton Reductions: It will now be profitable to compare the percentage increases in the purchasing power of cotton as measured in terms of gold with the actual percentage reductions in United States production brought about by the AAA. The total United States crop for the two years, 1933 and 1934 was 22,490,000 bales as compared to an estimated potential crop of 31,190,000 without any reduction efforts. This reduction amounts to a decrease of 28 per cent. For the individual grower, decreases were somewhat greater. The United States AAA reductions when added to a world crop (excluding China) for these two years of 44,600,000 bales gives a prospective world crop of 53,300,000 bales. The AAA reduction was, therefore, about 14.5 per cent of the prospective world crop.

The increases of purchasing power of 10 per cent for the last eight months of 1933 and of 21 per cent for the year 1934 give a weighted average increase for these 20 months of 16.6 per cent. This percentage increase in purchasing power exceeds slightly the percentage reduction in the world crop and offsets about 60 per cent of the United States percentage reductions of 28 per cent. The 1935 purchasing power increase was 17 per cent or about equal to the average for the reduction period falling in 1933 and 1934.

The question now arises as to whether the benefit payments, made up for the market value of the remaining 40 per cent of the total reduction of 8,700,000 bales or 3,480,000 bales of cotton. The benefit payments to cotton growers for 1933-34 and 1934-35 crop-years have been estimated at $279,600,000. This amount will average $80.35 per bale for the 3,480,000 bales. This sum equals 16.7 cents per pound if the bales average 478 pounds. This generous payment per pound makes it certain that the farmers were well paid for their reduction even if the actual percentage increase in purchasing power to the grower, which is known to be considerably above the increase indicated by New York prices, is omitted. Especially is this true since no cash expense was involved in producing these bales. Some crop of value was also raised on the contracted acreage. These returns were in addition to gains in purchasing power derived from devaluation of the dollar which Doctor Cox shows have been of great importance temporarily, at least, in increasing the purchasing power of cotton within the United States.

Whether the gain in purchasing power of cotton aside from the effects of devaluation of the dollar was due mainly to the AAA reductions or to other forces, is, of course, a question for discussion. But the facts are that increases in gold prices and purchasing power occurred when AAA reductions had their effect on market supplies and that these effects were more apparent in 1934 when the 12 cent loan policy was in force.

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THE COST OF TERRACING FARM LAND COOPERATIVELY

The inauguration of an active soil erosion control and soil conservation program by the Federal government and the establishment of a demonstration area in 1934 gave great impetus to such activities in Piedmont and Southside Virginia where erosion is a most serious problem. The establishment of Soil Conservation Camps which supply men to build terrace outlets, check dams and other erosion control devices served as an effective inducement to numerous farmers to take part in the program to conserve the nation's soil resources.

The most effective method of holding the soil of cultivated sloping fields of this area in place is the construction of terraces that follow the contours of a slope in order to slow up the run-off of rain water and thus prevent washing of the soil. Such terraces should be built approximately 18 inches to two feet high in order to hold the rain water from breaking over the terraces and washing gullies. In the past Virginia farmers who have sought to prevent erosion with terraces secured assistance in laying off terraces from a county agent or an extension agricultural engineer of the Virginia Polytechnic Institute. Farmers then built the terraces with home-made drag scrappers; a tedious process. With this method it is difficult to build the terraces high enough to be effective, and the cost is prohibitive to most farmers.

After seeing power terracing equipment building higher, stronger, and better formed terraces in the Banister River erosion control demonstration area at less cost than when using horse-drawn equipment, farmers in other sections of Southside Virginia wanted to secure similar equipment to build terraces for themselves. Terracing outfits of this kind cost approxi-

mately $4,200, which is too expensive for one farmer or even two or three cooperating farmers to purchase.

Through the activity of the Agricultural Engineering Department of the Virginia Polytechnic Institute, several companies manufacturing terracing equipment agreed to lease, with purchase options on liberal terms terracing outfits to incorporated cooperative associations of farmers. The acquisition of terracing equipment on these terms appealed to groups of farmers in a number of Southside and Piedmont counties and county terracing associations were organized in these counties and incorporated under the Virginia Cooperative Marketing Act early in 1935. Actual initiation of operations in the various counties was, however, held up by rainy weather during the spring.

Determination of general policies and the direction of the activities of each association is in the hands of a Board of Directors elected by the members. The actual operation of the terracing equipment is in the hands of a college-trained agricultural engineer, holding an appointment as assistant county agent and paid by the extension service. Each engineer plans the work for the outfit in his charge and tries to keep the machinery earning revenue as many hours as possible. The engineer lays off the terraces and superintends their construction by the operators of the tractor and terracer employed by the association to work under his direction.

At the request of the associations the Virginia Polytechnic Institute extension agricultural economist worked out and set up for each association a simple double-entry bookkeeping system. The agricultural engineer of each association keeps the records of operation, is responsible for collections, and is required to balance the books monthly and make up a monthly operating statement, copies of which are submitted to the board of directors, the machinery company, from which the outfit is leased and the extension specialist. At the end of the fiscal year the extension economist visits each association and assists in the preparation of an operating statement covering the period of operation of each outfit and the balance sheet as of the close of the year.

The majority of the associations operated seven months during 1935, beginning operations the first of June. The associations that started earlier operated at a disadvantage because there was so much wet weather during the spring they were unable to work while depreciation and interest charges continued. Summer operations were also handicapped as farmers were reluctant to have terraces built which would destroy part of the growing crops.

In some counties the engineers were successful in finding other work for the equipment, such as grading roads, pulling stumps and trees, clearing streams of obstructions, straightening and cleaning out ditches, grading golf courses, athletic fields and building sites. The Albemarle Terracing Association did considerable sub-soiling and disked land in preparation for seeding to small grain. Three associations earned more from such miscellaneous services than they did from terracing. Even with this supplementary work, however, the total hours worked by the outfits amounted to only 26 per cent to 55 per cent of the possible working hours, figuring eight hours per day for every day except Sundays and holidays. The average time that equipment was used by all eight associations was 37 per cent of the possible working time.

The revenue earned, by charging members $3 per hour for the time the outfit actually worked for them, ranged from $1,139 to $2,662, with an average of $1,984 per association. The operating costs ranged from $1,125 to $2,331, with an average of $1,760. The net earnings from the operation of the terracing equipment ranged from a loss of $137 to a net gain of $688, with an average net gain of $224 for the eight associations. There are numerous factors responsible for the wide variation in the operating costs and the net earnings.

The percentage of the time worked is probably the most important factor determining net earnings. This is indicated by the fact that the association which incurred a loss of $137 operated only 26 per cent of the possible working hours, whereas the association with the largest net earnings of $688 operated 54 per cent of the possible working time. The depreciation and interest costs per hour worked are greatly influenced by the percentage of the time that an outfit is operating. Depreciation is figured at the rate of 18 per cent per year of the original cost, which amounts to $63 per month. This expense item continues regardless of whether the outfit is working and earning; likewise the interest charge of 6 per cent a year.

There was wide variation in operating costs per hour, which ranged from $2.20 to $3.19 with an average cost of $2.66 per revenue hour worked. Most of the associations paid the tractor and terracer operators thirty cents per hour though rates up to forty-five cents were paid by a few associations. The amount of time lost due to breakdowns and due to the tractor getting stalled ran up the cost for some associations. Some of the associations used the operators to help in making minor repairs and this ran up the wage cost, but helped to hold down repair cost. Another important factor was the amount of time lost in moving from one job to another. One association served 154 farmers during the year and spent an average of only five hours on each job, whereas another association worked approximately the same number of hours during the year in serving 41 farmers. This gave the latter association an average of 19 hours on each job. It naturally required considerably more time on the road in moving between the 154 farms than in moving between the 41 farms.

A few associations had large repair bills. Part of this was caused by faulty parts and part by damage done to the tractor from inefficient operation by inexperienced operators. The cost of interest varied with the time worked, which influenced the earnings with which to make payments and reduced interest cost, as well as with the time required for collection of accounts. Those associations collecting promptly for the work completed had the lowest interest cost per hour worked.

The factors of importance in the variations in miscellaneous expenses were payments to directors and the cost of insurance. Only two of the associations carried liability and employee's compensation insurance in any form. Fortunately the one association which experienced an accident to one of its employees was one of those associations carrying this type of insurance. The other associations are taking out this type of insurance for the current year. Some of the associations paid the directors for attending meetings of the board whereas others did not, in order to hold down operating costs until the outfit is paid for.

It is important to note that the total operating cost per hour was about in proportion to the percentage of the possible working time that the out-

fit was actually working. This grew out of the fact that depreciation and interest made up a large proportion of total costs and were relatively fixed costs regardless of the number of hours worked. The larger the number of hours over which to spread these fixed costs the lower was the operating cost per hour.

The analysis of operating costs for 1935 indicates that in order to cover expenses a terracing association must keep its outfit working at least one-third of the working days during a year. In order to earn a sufficient net income to be able to pay for the tractor at a rate faster than the depreciation, an association must work at least 40 per cent of the possible working hours during the year. In order to maintain the schedule of payments set forth in the lease agreement the outfit must be earning revenue over 50 per cent of the working time during the year. Whether this can be done with normal weather conditions remains to be seen.

The approximate cost of protecting farm land with terraces has been computed on the basis of reports of the various association engineers showing the number of acres of land protected by terraces built by the association's equipment. The weighted average cost per acre to build the terraces to prevent soil erosion, varied from $1.18 in Halifax County to $2.15 per acre in Albemarle County, with a weighted average cost of $1.44 per acre. The most important factors influencing this variation are the slope and condition (such as gullies) of the fields terraced and the type of soil of which the terraces are built. In order to be effective terraces must be built sufficiently close together. On steep slopes this requires a larger number of terraces than in fields where the slope is more gradual. Consequently, the cost of protecting an acre of land on a steep slope requiring a large number of terraces is greater than in a field of the same size with a gradual slope which requires a smaller number of terraces to give the same amount of protection. The type of soil in the fields being terraced also influences cost because less fuel is required in moving light sandy soil into a terrace than in moving heavy clay soil.

The weighted average cost of protecting an acre of land with terraces built by the outfits of the eight terracing associations was $1.44 during 1935. It is possible that as the engineers and operators gain experience the cost can be reduced below this figure. Even at a cost of $2.00 per acre the building of terraces appears to be a worth while investment to conserve the fertility of a farmer's land. When this cost is spread over a period of years it would appear that the cost of retaining the fertility of the land is considerably less than the cost of adding fertility every year in the form of fertilizer to replace the plant food washed away from unterraced land.

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THE GRAIN MONOPOLY IN CZECHOSLOVAKIA

The Grain Monopoly conducted by the Czechoslovakian Grain Association, has been flourishing in Czechoslovakia more than a year and a half. The balance of the Association, at the end of the first year of its activity, July 1, 1935, reached 1,139 million crowns.[1] Its resources then

[1] The Czechoslovakian crown (2.963 cents at par) has been quoted at New York between 4 and 5 cents since 1933.

included corn in store, valued at more than 825 million crowns, and other resources, valued at 250 million crowns. Its liabilities, included, among other items, (a) share capital, 50 million crowns; (b) grain bills of exchange, 180 million crowns; (c) creditors, 876 million crowns, and (d) net profit, 3 million crowns.

Financial results of the first year's operation of the Monopoly were favorable, with the Grain Association obtaining from the Government a subvention, limited by law to 60 million crowns yearly. The Government in return obtained from the Grain Association, directly or indirectly, during the first year of operation of the association nearly 90 million crowns. This included customs duties on Jugoslavian wheat, 55 million crowns, increased profits of Government owned railways in transporting grain to warehouses, 21.5 million crowns, and other income.

The Czechoslovakian Grain Association is not to remain idle. There are many complicated problems which have to be solved in order that it bring the most desirable results. The first year of its existence has showed, no doubt, that the prices established by the Government, under the Law on the Grain Monopoly, increased the buying-power of the majority of Czechoslovakian farmers. Out of 1,642,600 land-owners, the activities of the Grain Monopoly increased the buying power of two-thirds, but damaged materially the conditions of the other third.

The increase in the buying power of farmers in turn increased the demand for artificial compost and other economic needs, increased bank deposits and decreased unemployment in other branches of industry.

The profitableness of grain prices, established by this monopoly, threatens to bring with it an increase in the seeding of grain, a condition dangerous to the Grain Monopoly, and threatens to produce such a quantity of grain as cannot be sold either at home or abroad without loss. The Grain Association handled 39,000 carloads of wheat during the period, July-November, 1934, and 55,000 carloads during the same period in 1935. The answer to this undesirable situation lies either in decreasing the acquisition price of wheat or in forcing a decrease in area seeded. Adoption of the first measure could be instantly justified, if everyone admitted that the acquisition prices of grains were too high. But this is not and has not been the case. On the more important European and American markets grain was quoted in May, 1934, considerably lower than the acquisition prices established by the Grain Monopoly; and representatives of the consumers' groups in the Czechoslovakian Grain Association protested against what seemed to them to be high acquisition prices of grain. However, the Czechoslovakian grain monopoly was established because of world grain prices so low as to threaten the sound evolution of farm economics in the Republic. Perhaps this explains why the consumers' representatives in the Czechoslovakian Grain Association limited their activities to a mere protest. Being aware of the very high import duties on grain in Czechoslovakia, these representatives did not allow the question of prices to burst into a conflict.

Thus, the Czechoslovakian Grain Association adopted as a first measure in the effort to restore grain prices, a decrease of 8 per cent in the area of wheat seeded for the years 1935 and 1936.

As a second measure in restoring grain prices, the farmers have adopted the point of view that it is necessary to make use of roughage grains in

livestock feeding, instead of selling these grains to the Czechoslovakian Grain Association. It is clear, however, that the development of such a policy is closely related to an acceptable solution of the question of proper relationships between grain prices and prices of livestock and livestock products.

The adoption of both measures mentioned above would bring favorable results after some time. It is easy to see why the question has been raised as to the need of extending the activities of the monopoly over a period of years, some twenty years being mentioned. The first motive for continuing the activities of the monopoly for a number of years is that the commissioners in case of uncertainty as to the duration of the monopoly, might show indifference or dangerous negligence. The second motive for continuing monopoly activities is the possibility, under such conditions, of solving the question of building grain warehouses in different parts of the grain producing areas. For want of granaries the Czechoslovakian Grain Association, during the first year of its existence, paid nearly 21.5 million crowns for the transportation of grain to temporary granaries. The building of grain warehouses would eliminate such an unprofitable expedient. Such a building program would be possible, however, only if the Grain Monopoly existed a number of years, so that the expenses of the building could be amortized in a normal manner. It should not be assumed, however, that this amortization need extend over a period so long as 20 years. Nevertheless, a further extension of the activities of the Grain Monopoly is a logical consequence of its recent establishment. Institutions such as a Grain Monopoly, are not established for a period of two or three years. It seems probable, as was officially announced by Dr. Zadina, the Minister of Agriculture, that Czechoslovakia is now on the verge of enacting a new law, providing for the extension of the activities of the Grain Monopoly.

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BOOK REVIEWS

Die Tschechoslowakische Landwirtschaft (Czechoslovak Agriculture), by Dr. Eduard Reich, C. E. Verlagsbuchhandlung, P. Parey. Berlin. 1935. Pp. 312. Price R.M. 13:20.

In the Berlin series "Berichte über Landwirtschaft" "Agricultural Reports" there has recently appeared a work in German: "Die Tschechoslowakische Landwirtschaft; ihre Grundlagen und ihre Organisation," by Eng. Dr. E. Reich, General Secretary of the Czechoslovakian Agricultural Academy. The book thus appears in a series published by the German Ministry for Nutrition and Agriculture in Berlin and holds a well-recognised position amongst the world's scientific agricultural publications.

Dr. Reich's new work is of 300 pages odd, whereas his original, published by the Agricultural Ministry in Prague, contained 800 pages. However there is no loss of substance in the German edition, while the arrangement and ordering of the book are exemplary. The account is above all readable; and the abundant maps and tabular material bring home the author's points in a clear manner. At a period when new solutions, new methods, and new policies, are awaited, the expert will here find ample stimulus to fruitful ideas. A review of the existing conditions and interdependence of the sections of Agriculture is supplemented by careful consideration of the relation between the various branches and the organization of the whole.

Successive chapters cover: the geographical formation of the country, and nature of the soils in different areas; the state of communications and electrification; domestic industries and seasonal occupations of peasants in industry and the effect on the intensity of Agriculture; a historical review of the development of economic conditions and forms of ownership, especially in the Eastern Lands of the State (i.e. Slovakia and Sub-Carpathian Russia); and, finally, based on the above description of underlying conditions, a detailed presentation of the position of production and marketing, the state of organization and the tasks of organization yet to be achieved. Particular attention is devoted to: the sociological standpoint; the idea of establishing economic balance between the Eastern and Western regions of the State; the planning and geonomic shaping of Agriculture, and in connection with this the advisory, school, and experimental, systems.

The work gains by the author's exact knowledge of the distress of the small peasant. Through his official position, and as General Secretary of the Agricultural Academy, the author stands in the midst of a far-reaching work of organization, and has drawn on extensive and first-hand information. Even to a reader with a convinced liberalistic outlook, the book is more than a source of facts: it is a matter to be reflected on and learnt from.

The bibliography refers almost exclusively to German, English, and French publications on Czechoslovakian Agriculture.

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Southern Regions of the United States, by Howard W. Odum. Chapel Hill: The University of North Carolina Press. 1936. Pp. xi, 644. $4.00.

The author of this volume is head of the department of sociology at University of North Carolina, and editor of *Social Forces,* one of the leading journals in the field of sociology. He has long been prominently identified with the work of the Social Science Research Council, especially the Southern Regional Committee, and has supervised a great deal of research financed by the Council.

Late in 1931 a grant was made by the Council for a southern regional study, and Dr. Odum designated as Director. Early in 1932 Dr. Odum submitted an outline of the proposed research, and the study was begun. Subsequent grants were made as required, Dr. Odum thus being able to secure the assistance of a large number of assistants in different sections of the South.

The result of the collaboration was a vast amount of new and valuable material on economic and social conditions in the South. Dr. Odum took these reports, synthesized them, and himself wrote the final summary, which is the object of this review. It is a massive volume of 664 large pages, containing more than 700 varied indices and some 600 maps, charts and tables. Throughout the volume the left-hand page is devoted to illustrative maps, charts, and tables, while the right-hand page carries the discussion forward. The publishers have spared no expense on the mechanics of the volume in turning out a product of fine quality.

A principal objective of the study, as stated by Dr. Odum, is "to present an adequate picture, partial but representative, of the southern regions of the United States in fair perspective as to time-quality, to geographic factors, and to the cultural equipment and behavior of the people."

The report is divided into three parts, the first being a rather complete syllabus and summary, the second a more detailed exposition of the subject, while the third contains a statement of the plan of research, a full bibliography, and a detailed index.

This volume deserves a place in the library of any person or institution interested in either the South or in regionalism in general. It contains a wealth of data, well interpreted on each of these subjects, and the comprehensive index makes the information readily available.

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The Growth and Distribution of Population, by S. Vere Pearson. New York: John Wiley and Sons, Inc. 1935. Pp. 449. $4.00.

The title of this book gives a misleading idea of its contents, much of which consists of an indictment of the systems of land ownership and taxation that now hold in most nations, and ex cathedra statements that public ownership of land and the taking of ground rent instead of taxes constitute the ideal system. The author describes himself as a physician and poultry farmer, who has studied economics and psychology for more than thirty years, not so much "the economics and psychology of the textbooks" as "the elementary and commonsense forms, a knowledge of which an average man or woman acquires from life's experience and from nowhere else."

The central theme may be summarized as follows. "The natural and numerical progress of human beings entails access to areas of natural opportunity progressively smaller." Fortunately, "the development of human skill coincidently with the increase in numbers of human beings enables man to exist comfortably upon smaller and smaller areas of land." As this goes on the value of sites rises steadily. For "the changes to smaller areas of occupancy to occur automatically and smoothly" it is necessary that a "magic instrument" be employed, namely, the public ownership of land and the utilization of rising site values for the common good. Had it been utilized "every fresh advance, every new complication in society would have been smoothly traversed without any conflict arising between an individual's self interest and that of the community." Disregard of the "magic instrument" is the cause of most of the economic and social ailments besetting mankind.

These ailments include many one would expect to find discussed in such a book, for example, the taxation of man's industry made necessary because profits from rising site values accrue to landlords instead of the community; landlords raising the cost of, or even blocking, improvements needed by the community by demanding unreasonable prices for land required; and the difficulty of access of people to the land. Others might not be anticipated by the reader, but nevertheless are directly related to land, e.g., the failure of land settlement schemes and housing projects, and "unhealthy agglomerations of inhabitants into overcrowded centers of population." Less direct is failure in "the first duty of government to collect the rent of land" which leads to tariffs, quotas, shipping subsidies, and peace treaties which in turn upset natural movements of population to say nothing of their other harmful consequences.

To read that some of the evils cited arise from our systems of land ownership and taxation will startle some readers, for they concern, such varied matters as wages, morals, and militarism. Use of the "magic instrument" gives one country (Northern Nigeria) more contented inhabitants, and smaller expenditures for legal actions, police and prisons, and military systems than other countries which disregard it. If western nations would use this "magic instrument" wages in agriculture and other occupations would go up, "a more human code of morals free from jealousies would arise," "reasons for separations and divorces would grow fewer, and . . . wiser and easier legal proceedings would come into existence." "Sex . . . would gain a freedom which is difficult in the society of today." "The full advantages of a big family—no longer a burden to anyone—would come to be recognized." "Population could grow naturally," there would then be no social or economic arguments for practicing contraception.

As a general criticism, there is far too much harping on the "magic instrument," far too much rambling and digressing, and far too little attempt to present evidence supporting the many statements which take for granted first a causal connection between the ills so well described and the usual form of land ownership and taxation, and second the effectiveness of the remedy proposed. Perhaps because the reviewer believes in extending further the public control over land he is disappointed by the exaggerated claims and the lack of proof.

Most agricultural economists will be surprised to read that "the best paying farms, in the Eastern States anyway, are not more than 80 acres in extent." They are likely to wonder about the standard of living upon

which France by more intensive farming "can support a population equal to the populations of India, France, and England." They may think Pearson has such a dense population in mind when he advocates dry methods of disposing of human excreta in semi-rural neighborhoods because of the valuable fertilizer that could be obtained.

Few demographers will agree that if the decline in the birth rate in modern times "is to be ascribed to one cause only that cause is late marriage," and not contraception. Like the reviewer they will read "one cause of this [decline in the U. S. birth rate from 1880 to 1930] is undoubtedly an increase in celibacy," and then note from the census returns on marital condition (which began in 1890) the large decrease from 1890 to 1930 in the proportion of males 20-34 and females 15-34 (by five year age periods) who were single.

The author is at his best in the latter part of the book while discussing "The Garden City Idea," "Town and Country Planning," "Traffic Troubles," and "Housing."

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Six Rural Problem Areas: Relief—Resources—Rehabilitation, by P. G. Beck and M. C. Forster. Washington: Federal Emergency Relief Administration. 1935. Pp. ix, 167.

This monograph reports the results of a research study of the relief problem in six rural areas where relief rates were highest during 1933-34. The study was begun under the direction of Dr. Dwight Sanderson and others during the summer of 1934. The field work in each area was supervised by a director chosen from the sociology staff of a university located in or near that area. The report was prepared by the authors under the general direction of Howard B. Myers, Assistant Director in charge of Research, FERA.

The introduction to this monograph outlines the purpose of the study which briefly was to find the causes of high relief loads during late 1933 and early 1934 within certain well defined rural areas, which it was "tentatively concluded were to be found in certain fundamental maladjustments between human and material resources." The basis for selection of the areas is described in this section and Appendix D. Within the 6 areas, 65 counties, representing as nearly as possible the range of social and economic conditions in each area, were chosen for a detailed study of the relief problem. They included 5 per cent of the families living in rural territory and in towns of less than 5000 population within the areas. The areas and the counties surveyed are shown in Figure 2. The latter and the counties within each area are listed in Appendix C. The areas were designated as follows: Appalachian-Ozark, Lakes States Cut-over, Short-Grass Spring Wheat, Short-Grass Winter Wheat, Eastern Cotton and Western Cotton.

In Chapter I each problem area is defined. Soil characteristics, rainfall, topography, native vegetation, present use of the land and other factors of an agricultural nature are briefly outlined. Timber, mineral and other natural resources are listed. The character of the population, its origin, and a brief history of the development and exploitation of each area are reported. Such indications of the financial status of the residents as delin-

quent taxes and mortgage indebtedness are given for certain of the areas.

Chapter II deals with the general relief situation. The relief rates in each area, their trend during the period from July 1933 to early 1935, and sums spent by federal, state, and local governments for relief during the 19 months from April 1933 through October 1934 are shown. Relief rates for rural families are compared with those for town families within each area. The type of relief, whether direct or work, and the amount received per family are given for each area.

Chapter III is a description of the families receiving relief. This includes analyses as to the type of family, whether normal, one-person or broken; the size of families; the age composition of the families, especially the number of dependents, that is, persons under 16 years of age or 65 years of age or older; the number of gainful workers per family; and other factors of importance in portraying the nature of the relief situation. The distribution of persons receiving relief by age, sex, and race was compared with that of the total population of each area to indicate the groups which were most dependent on relief.

The families on relief also were grouped according to the usual occupation of the head of the family. Since the population of the areas was principally rural, the classification amounts largely to a subclassification of agricultural workers into owners, tenants, croppers, and laborers. Relief rates for these various group were compared. The distribution of family heads in each occupational group according to age and sex also is given.

The present status of employment among male heads of families receiving relief is reported and shifts in occupation from that usually followed were studied. This is especially enlightening since it shows the shifting of tenants and farm laborers away from farms and of non-agricultural workers "back to the farm." Also are shown the shifts in residences of families on relief, that is, shifts from open country to towns, from towns and cities to the open country, and from county to county. The net "back to the farm" movement in the problem areas was compared with that for the entire nation as indicated by the 1935 census.

Chapter IV deals with the social and economic resources of families receiving relief within the six areas. These resources included homes, farm lands, work stock, other livestock, and employment, including the operation of farms. This part of the survey covered the size of farms operated and discusses their ability to support families under normal conditions.

Chapter V is a discussion of plans and prospects for rehabilitation of families receiving relief. By rehabilitation is meant not a restoration to a former status, which in many cases was very insecure, but the attainment and maintenance of a social and economic level equal at least to "minimum standards of health, wealth, security, and social well-being considered essential to the national welfare." The authors plainly state that the effectiveness of such a program will be determined by the kind and supply of human and material resources available and the efficiency with which they are utilized. Natural resources must be made available and families must be capable of using them. Also, human resources, that is, the training, experience and aptitudes of the family, the place of the family in the community and similar factors must be given consideration.

First to be considered was the ability of families on relief to become

self-supporting, based on the opinions of relief workers. It was estimated that 20 per cent of the families were not capable of self-support, 15 per cent were capable only if supervised, and 65 per cent were capable if given temporary financial assistance. These groups were further analyzed according to type of family and number of gainful workers. The ability of families to become self-supporting was summarized by areas, sex of family head and place of residence. It was concluded that those families incapable of supporting themselves were chiefly those which would be provided for by a comprehensive system of social legislation.

Second, the standard of living and education of family heads were used as indexes of the socio-economic level of the areas. To indicate the standards of living in each area and to compare it with those in other areas and for the nation at large, the 1930 census data as to number of telephones, radios, electric lights, and running water were tabulated for each area. The distribution of family heads according to education also was reported. About 16 per cent reported no schooling.

Third, the occupational experience of the heads of families on relief was obtained in order to indicate the means whereby rehabilitation could be accomplished. In the case of rehabilitation upon the land, the need for supplemental employment also was reported.

Finally, the rehabitation prospects for each area were outlined. According to the authors, rehabilitation of the Appalachian-Ozark area, for example, will involve (1) the moving of families from sub-marginal lands, (2) the regulation of commercial exploitation of the area's natural resources to insure them orderly development, (3) the development of forests and recreational areas and (4) the extension of educational facilities.

As a whole, this study seems to have been carefully planned and well-executed. The manuscript is clear and concise. The authors have been content to report the results of their study and their recommendations with little, if any, evidence of bias or favor.

Studies such as this should precede programs and plans for the rehabilitation of families on relief and should be used as a basis for such programs and plans, if the work is to be done in an efficient and orderly manner. To be of any value, therefore, such studies should be carefully digested by those directing the rehabilitation work, and should form a guide for them. There are numerous evidences, however, that this study has not been taken seriously by many of those engaged in the rehabilitation of rural families. Sometimes, expediency justifies a departure from well-developed plans especially when human lives are at stake, but too often when several departments of the government are engaged in similar work, research conducted by one of these departments is received by the others with prejudice and is not given the consideration it deserves.

It has always been a question in the minds of many of us whether those engaged in rehabilitation work have not set too high a goal in the rehabilitation of welfare families. If the goal as outlined by the authors were attained, those previously on relief would be in much better condition than a large percentage of those who have not received aid from outside sources.

Besides the manuscript, the monograph contains 15 helpful figures in the text and 7 in Appendix B. Eleven pertinent summary tables appear in the text and 25 more detailed ones are in Appendix A. Appendix E contains a copy of the survey schedule used in the study and Appendix F is a list of references cited in the reports.

H. M. Haag

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Is Industry Decentralizing?, by Daniel B. Cromer. Philadelphia: University of Pennsylvania Press. 1936. Pp. 105. $1.00.

The bulletin under review is the third of a series of publications setting forth the results of the study of Population Redistribution being carried forward under the direction of Carter Goodrich. The two earlier publications dealt with the migration of people. Jobs, however, move as well as men, and the present study is devoted to changes in the location of employment. "The analysis is confined to manufacturing, and is more concerned with shifts between types of communities than with movements to and from particular regions."

The study is based upon an analysis of both published and unpublished data of the Bureau of Census as collected in the Census of Manufacturers. An analysis is presented of the trends in the location of manufacturing employment from 1899 to 1933, and a more elaborate examination of the last six years of the period, relating to which fuller data was available. The objective of the study was not so much to determine the shift in employment between the geographic region of the country as to examine the "varying fortunes of large places as compared with smaller ones and of isolated communities as compared with those closer to the great metropolitan centers." This was done by a comparison of the location of wage jobs in manufacturing at the several Census periods, the distribution of wage jobs in new and in defunct and idle plants from 1928 to 1933, and wage jobs in relocated plants from 1928 to 1933.

The conclusion drawn from the study is that while during the depression years 1932 and 1933 there was some slight evidence in certain industries of a tendency for the location of wage jobs to disperse to smaller centers, there was no conclusive evidence found to indicate that this was true for industry as a whole. While the larger industrial cities tended to lose their relative position in the number of wage jobs, the gain was made by the area adjacent to these large centers. The movement was one of diffusion rather than of dispersion to use the author's terms. The conclusion is drawn that "it seems more reasonable to expect that the industrial counties of the future may number 250 instead of 200 than to look for any wide dispersion of industry." In this respect the conclusion would in general agree with the finding of Tracy E. Thompson in his Census monograph entitled, "Location of Manufactures, 1899-1929."

The findings of the study will not give much encouragement to those who suggest that the decentralization of industry is much to be desired.

J. I. Falconer

Ohio State University

The Economics of Open Price Systems, by E. S. Lyon and V. Abramson. The Brookings Institution. 1936. Pp. 159. $1.25.

This is the third of a series of studies in the general field of price and trade practices issued by the Brookings Institution. The other two were *Advertising Allowances* and *The Economics of Free Deals*. The present study was initiated as part of the review of the National Recovery Administration although much of the material discussed antedates the establishment of the NRA.

Perhaps the general scope of the study can best be introduced by a series of direct sentence quotations. "In general terms two plans have been devised and utilized by modern nations to accomplish this integration of specialized activities in the production of economic goods. One is to rely in considerable measure upon a centralized authority. . . . The second . . . places reliance for the most part on individual decisions. . . . Under this (second) system producers, it is thought, will secure knowledge of opportunities for the employment of the productive factors, and competitive enterprise will work to adapt production to those market demands. It is a necessary part of this plan that individuals or groups be prevented from controlling prices and production. . . . In such an economic organization, knowledge of prices at which goods and services can be bought and sold is vital to the making of choices. . . . Making such knowledge available is a large part of what we may speak of as the organization of open markets. To effect the organization of an open market is often a difficult task. . . . The most effective open market mechanisms which have been devised are the so-called organized exchanges, illustrated by those selling such staple commodities as wheat, cotton, and listed securities. . . . It is not possible, however, to apply the principles of the organized exchange fully to all goods in all markets. . . . Where the mechanical conditions of the organized exchange cannot feasibly be reproduced, various schemes have been devised for the purpose of giving the members of an industry and sometimes their customers a knowledge of prices within the industry. It is to such plans that the general term 'open price system' has ordinarily been applied."

The analogy between the organized commodity exchanges and open price systems must, in the opinion of the present reviewer, be used carefully. The exchanges appear to give a very high degree of price sensitivity. There is possible a very immediate response to new conditions based on new information or rumor. Reporting is instantaneous. It is true that recent legislation has limited the extent of price change that may take place in a given twenty-four hours, but aside from this limitation price fluctuations may occur without restraint. In contrast, the price reporting in open price systems must be somewhat delayed. Moreover, there is a frequent suggestion that prices reported must be adhered to for a definite period of time. These differences appear to be more than differences in degree and they raise the question as to whether open price systems are set up in the attempt to ape or maintain competition on the one hand or to modify it on the other.

The study traces in considerable detail the early history of open price systems making considerable references to other studies and opinions. There follows a discussion of the trials and tribulations under the NRA. Some attempt is made to describe the effect of open pricing

upon competition, stability and the size of business firms. No precise measurement of these effects is given and perhaps none is possible. Certainly the reader is left with an open mind as to the actual effect of the various experiments in this field that have so far been undertaken. One closing point is made in the discussion of open prices and small business, namely, that the preservation of small units through government action when they could not otherwise survive must mean the support of economically inefficient units and thus emphasizes that where protection is given to such inefficient units some basis of public interest in their preservation should be clearly shown.

Perhaps some further study might have been made of the effect of open pricing upon the "value added" by various manufacturing and mercantile enterprises. Such study might also have included some effect on profits for it is part of the implication of monopoly that profits are abnormally high. One wonders whether the various open price systems have resulted either in increasing or in decreasing the rate of profit and this query leads to a related one as to the effect of such monopolies as have existed on the consumer as well as on the monopolist.

In chapter six there is a full discussion of the problems to be faced in constructing open price systems. Nine fundamental considerations are listed, namely: 1. the products on which filing is to be required; 2. the information to be filed; 3. the dissemination to be undertaken; 4. the agency which is to administer the system; 5. the apportionment of the costs of operation; 6. the determination of the prices to be reported—whether past prices, current offers, or future offers; 7. the possible misrepresentations of buyers; 8. the so-called "price raid"; and 9. the construction of bid filing systems.

No very definitive conclusions are stated regarding these problems, but their complications are thoroughly discussed. Such questions as the standardization of commodities, the reporting of past, present and future prices, the control by government as opposed to private interests and the recipients of the tabulated information are all left for final individual decision by each particular industry. It is pointed out and perhaps should be emphasized that no system of reporting prices or other data will avoid the danger of misrepresentation either conscious or unconscious. Since this is so, there will remain the question as to whether tabulated data will give to the rank and file of operators more nearly accurate information than they now get from their private sources.

The final chapter discusses the desirability of governmental cooperation or control in the establishment and operation of open price systems. The definite suggestion is made that interested industries discuss with some proper governmental agencies any proposed open price plans. Perhaps this would mean additional responsibilities for the Federal Trade Commission or perhaps some new agency. The object of such discussion would be the assurance that the plans were in harmony with general public policy and that they would lead to that degree of similarity to competition which is decided to be advisable in each specific case.

On the whole it should perhaps be said that this study raises many more questions than it answers. It leaves the impression that open pricing is socially desirable under certain circumstances. It makes no attempt, however, to apply those circumstances to any individual industry even

by way of illustration. Whether any industry can be found that will meet the various criteria of advantage and avoid the various criteria of disadvantage in open pricing remains to be seen. A study of individual industries with these questions in view is clearly the next step in the general consideration. May we hope that the Brookings Institution will find opportunity to carry on some fundamental studies in this field.

ROLAND S. VAILE

University of Minnesota

Glory Roads—The Psychological State of California, by Luther H. Whiteman and Samuel L. Lewis. Crowell. 1936. Pp. xxii, 267. $2.00.

This is an account of various plans and organizations that the economic collapse has stimulated in California, particularly in southern California. A listing of the organizations mentioned perhaps gives some idea of its content. Among those noted are: "The Technates"; The Continental Committee for Technocracy; The Utopian Society, Inc.; The O.A.R.P., Ltd. (the Old Age Revolving Pensions Limited, or Townsend plan); Rochedale Cooperatives; various barter and self-help groups such as Unemployed Exchange Association (UXA), Santa Barbara County Cooperative Industries (SBCCI) and Los Angeles County Rehabilitation Administration (LACRA), some of which have federal assistance; Tradex, an organized system for exchanging labor and surplus commodities with a sort of bank and system of "chex" to facilitate exchange; and Upton Sinclair's "End Poverty in California" (EPIC). These organizations are dealt with in a descriptive manner, with some attention given to the underlying philosophy of some of the movements. How accurate the facts are, the reviewer is in no position to judge. It would appear that the authors have had first-hand opportunities to observe some of these movements from participation in them.

There is nothing here of special interest to agricultural economists except that it points out that times of great economic stress are periods when great masses of people are subject to being absorbed in movements of one kind or another. No special attention is given to organization in agriculture although from time to time the strikes of agricultural workers which have occurred during this same period are incidentally mentioned.

The references to "Reciprocal Economy" deserve mention. This is defined as a supplementary economic system, coexisting with our present form of society, by which the unemployed assist themselves particularly in times of depression. Tradex, noted above, is an organized way of carrying this out. The authors state that some 40,000 deal with Tradex with transactions which averages over TX400,000 (dollars) a month. Goods and services are exchanged through a central office or "banx" with "chex" or Tradex money used as a means of clearing the transactions. Three per cent is deducted by Tradex for overhead expenses. One of the ultimate tests of a business institution is: Will it work to help facilitate exchange and thereby make it possible for people to be employed or employ themselves at productive work?

L. J. NORTON

University of Illinois

Group Settlement: Ethnic Communities in Western Canada, by C. A. Dawson. Toronto: The Macmillan Co. 1936. Pp. xx, 395. $4.50.

This volume, the seventh of the series of studies of *Canadian Frontiers of Settlement* edited by W. A. Mackintosh and W. L. G. Joerg, is a study of the settlements made by the Doukhobors, Mennonites, Mormons, the German Catholics and French Canadians in the Prairie Provinces of Canada. All of them were "close" colonies in contrast with the usual individualistic "shotgun" type of settlements. Some of them were directed and even partly financed, such as the Doukhobors and Mormons, and all of them had sponsoring institutions. Each group is treated separately in this volume and the reader is acquainted with the religious and historical background and the motives which caused them to settle in Canada. Whereas the Germans, French Canadians and Mormons came comparatively short distances, the Doukhobors and Mennonites came from Russia. The history of their settlement in Canada, a description of their modes and standards of life and their adjustment to prairie agriculture follows.

The historical cycle of these colonies is treated in two phases, segregation and secularization. The Doukhobors, Mennonites and Mormons sought a new home as far removed from the older civilizations as possible so they could practice their religion and "way of life" unmolested by neighbors who had a different way of life. The desire for segregation was not so positive with the German Catholics and French Canadians, whose church had learned to adjust itself to secular factors and the cultural pattern of America in general. Group settlement had its advantages, especially to those sects which were more or less communistic and who settled in villages. Mutual help and cooperation in public improvements, community buildings and even building individual houses were part of the "way of life." It gave stability to the community.

Segregation in the early stages is followed by secularization during which the influx of new ideas, change to the language of the country, public schools, secular recreation and merging with other peoples take place. The railway and later the improved road were the most important factors in this process. They brought in the "outsiders" who settled the lands round about the colonies; "commercial" villages sprang up adjacent to the railroads which linked the area with the commercial and political world. Although many of the colonies tried to be self-sufficient they could not avoid some contacts with the secular world and the English language. Some members sought work outside of the settlements and imported new ideas and secular ideals. The outsiders in time began to insist on their language and public schools for all. Where the issue was pressed it solidified the groups, but where patience was exercised secularization was only a matter of time. However, not all of the groups relinquished their culture to the same exent. In fact, when secularization was pushed under the fervor of the World War some of the Mennonites migrated to Mexico. However, public schools gradually came in, but with many compromises. Young people adopted the language and recreation of the "outsiders" and gradually the English language was used even in the churches. The Mormons, however, had no language difficulties and had previously adapted themselves to many secular forces.

The history of the amalgamation of these groups into Canadian life is paralleled in the United States with its problem of the "melting pot" and Americanization. All underpopulated countries can study the Cana-

dian experience with profit. This volume holds a worthy place in the series devoted to frontier settlement and is of tremendous interest to sociologists, land economists, and geographers.

GEORGE S. WEHRWEIN

University of Wisconsin

Rural Sociology, third edition, by J. M. Gillette. New York: The Macmillan Company. 1936. Pp. xxxiv, 778. $4.50.

This is the second revision of Gillette's *Rural Sociology* which originally appeared in 1922 and first was revised in 1928. The 1922 work replaced his *Constructive Rural Sociology* (1913) which was the pioneer in the field of rural sociology texts. The present edition is in many respects a new book in that many chapters have been entirely reworked and considerable new material has been introduced into most of the chapters.

The author's summary of these changes given in the preface states:

> This volume is almost a new book. Most of the matter and writing is new. The following chapters are wholly new: I, V, VI, VIII, XI, XII, XIII, XIV, XV, XXVII, XXX. The following ones are predominantly new: IV, IX, X, XVII, XXI, XXII, XXIII, XXIV, XXVIII, XXIX. The following are considerably new: VII, XVI, XVIII, XIX, XXV, XXVI, XXXI, XXXII, XXXIII, XXXIV, XXXV. No chapter is without revision.

The book has been built around the thesis that the relation of man to land is the fundamental avenue of approach to an understanding of rural problems in America. The relation of population numbers, distribution and mobility to land problems, is effectively presented. In this respect it is far superior to the previous edition. The book, because of its approach, should make an especially strong appeal to teachers who are connected with departments of agricultural economics and farm management.

The book is almost entirely confined to rural society in the United States. It is at its best in dealing with the problems of the middle west.

It is in most respects well designed as an introductory text, although there are certain conflicting tendencies with regard to adaptability to introductory students. It is elementary in assuming that the student has little frame of sociological reference and therefore introduces certain sociological generalizations at the beginning of several chapters. Like most books in the field, however, it does not make the fullest use of sociological principles in its discussion of rural society.

At certain points, notably Part III on bio-social conditions and Chapters XXVII and XXVIII, dealing with villages, the author introduces certain methodologies, procedures, and research techniques that would be of interest only to the advanced student in the field. These comments on techniques for research may help the student to sense the difficulty of research in the field of sociological data, but are a little premature for introductory classes. Chapter VIII on anthropo-metric characteristics of the rural population also is somewhat advanced.

It is very readable although somewhat formal in parts. The author has a tendency at the beginning of chapters to define, philosophize, and rationalize in working his way into the chapter. Sometimes the definitions of categories, generalizations on scientific methodologies, and the vocabulary used in these parts is a little difficult. Momentous topics are introduced at times in opening chapters with little development and with little relevance to what follows.

An abundance of bibliographical materials are presented, although a few of them cite older works more than seems justified. A good list of questions and problems for discussion follows each chapter as in the previous edition. A new feature which should vitalize the tables and charts for the student is a list of attention points under each.

The author deals too infrequently with the psychology of rural folk, although at points where this rural psychology is handled it is done exceedingly well. The psychology of the rural situation is best presented in Chapter 14 although the first half of Chapter 16 is also excellent. In these parts the author shows a penetrating insight into rural personality, a talent which might well have been exercised more fully throughout the book.

There are other leading texts with features that will appeal more strongly to those with special interests. Gillette's work is inferior to Sim's *Elements of Rural Sociology* in historical perspective. It is not vitalized with an analysis of current dynamic changes as is Kolb and Brunner's *A Study of Rural Society*. Gillette's work is much more limited in scope than Sorokin and Zimmerman's *Principles of Rural-Urban Sociology*.

In spite of these critical comments Gillette in many respects is still the father of rural sociology as far as text book writing is concerned. His work is as comprehensive in the topics covered, insofar as they apply to the situation of the United States, as any book in the field and more so than most of them. It is exceptional in having a full chapter dealing with the problems of farm labor. It perhaps utilizes to the greatest extent of any text in the field available census data in dealing with the problems of rural life.

PAUL H. LANDIS

The State College of Washington

Public Finance, by Alfred G. Buehler. New York: McGraw-Hill. 1936. Pp. xix, 632. $4.00.

Before the present century there was little tangible evidence of any great interest in the principles of public finance. Even after the books by Adams (1898) and Plehn (1896), there was another lull for twenty years. Since then, however, there have been many works dealing with public finance and taxation. The most recent of these is the one before us.

The facts of public finance may change rapidly, and may vary considerably from place to place. The principles, however, are stable and of uniform application. Professor Buehler wisely chooses to devote his discussion largely to the latter, and uses the former but for illustrative purposes. Such a treatment will give the book a much longer usefulness. To give the student a grasp of the principles, moreover, is much more important than to cram his head with ephemeral facts.

The treatment first deals with Public Expenditures and this is followed by a discussion of the devices which are used to control the costs of government. Much space is then given to Public Revenues which is followed by a treatment of Public Borrowing.

There will be disagreements, of course, with some of the reasoning and conclusions. But everyone must agree that Professor Buehler has given us a book which is easy to read and which sticks to the intent of discussing the principles and problems of governmental financing.

MERLIN H. HUNTER

University of Illinois

NEWS ITEMS

ANNUAL MEETING OF WESTERN FARM ECONOMICS ASSOCIATION

The annual meeting of the Western Farm Economics Association was held at Laramie, Wyoming, July 30, 31, and August 1. The program had been arranged by a committee consisting of A. F. Vass of Wyoming, Chairman, W. P. Thomas of Utah, M. N. Nelson of Oregon, and G. M. Peterson of California. The morning session on July 30 was held on the University campus. After an address by L. A. Moorhouse the meeting was devoted to a discussion of farm organization and management problems.

After the noon luncheon the group made a trip around the University and Experiment Station and moved to the Sunny Range summer camp about 35 miles from the University where the remainder of the meetings were held. The evening session consisted of an address of welcome by President Crane, University of Wyoming, and a geological and historical talk by Dr. S. H. Knight, state and university geologist in charge of the summer camp. In this talk Dr. Knight went back into the past ages and indicated how one range of mountains after another had been formed and eroded away to produce present conditions in the western states. This talk served as an excellent background for the later discussions of soil conservation and erosion which involved such a relatively short period of time.

The morning session on Friday was devoted to rural sociology in the programs of agricultural adjustment. The afternoon session was devoted to agriculture's share in the national income, international trade and recovery program, and the relation of the AAA reduction program to gold prices and purchasing power. The evening session was devoted to range and ranch investigations. The Saturday morning session was devoted to land utilization; the afternoon session to the agricultural conservation program, soil conservation and county planning.

Approximately 80 members representing ten of the eleven states attended the meetings. In its business meeting the Association decided to hold its next annual meeting at Reno, Nevada. The following officers were elected: G. M. Peterson, of California, President; B. H. Pubols, of Washington, Vice-President; and Cruz Venstrom, of Nevada, Secretary-Treasurer. The papers presented at the meetings will be bound and copies given to all paid-up members. Others may purchase copies of the Secretary-Treasurer.

NEW DEPARTMENT AT KANSAS

Effective July 1, 1936 the departments of Agricultural Economics and of Economics and Sociology of Kansas State College were merged into one department which will be known as the Department of Economics and Sociology. Dr. W. E. Grimes, who has been head of the Department of Agricultural Economics from 1921 until the time of the merger, has been designated as head of the merged department.

The American Society of Farm Managers and Rural Appraisers meeting with the Indiana Farm Management Association held their summer meet-

ing at Turkey Run Park near Rockville, Indiana, on July 1, and the following day attended the tour arranged by the Indiana Farm Management Association which was also attended by more than 600 landowners and farm managers. At the business meeting, the Society of Farm Managers and Rural Appraisers received the report of the committee appointed to set up plans for certifying Farm Managers or Rural Appraisers who qualified for professional recognition. The plan adopted is to award the title of "Professional Farm Manager" or "Professional Rural Appraiser" to those members of the Society who pass a qualifying examination. The details for offering suitable examinations and procedure are being developed.

Two committees of the American Farm Economic Association have recently been appointed, to report in 1937. The first is a Committee on Marketing Research, consisting of F. V. Waugh (chairman), H. Bruce Price, Harold B. Rowe, and H. R. Wellman. The second is a Committee on Recruiting and Training Personnel in Agricultural Economics, consisting of W. E. Grimes (chairman), C. O. Brannen, I. G. Davis, T. W. Schultz, and E. C. Young.

Studies of various technical phases of cotton quality have been amplified in the Bureau of Agricultural Economics in connection with the Department's expanded cotton research program. New appointments include Dr. Enoch Karrer, to head the physical studies on cotton fibers; Dr. Earl E. Berkeley, to have charge of X-ray studies; Mr. J. M. Cook, in charge of the spinning laboratory at Clemson, S.C., and Mr. R. L. Lee, in charge of the spinning laboratory at College Station, Texas. Dr. Carl M. Conrad now has charge of the chemical studies of cotton fiber quality, with particular reference to its stability, deterioration, and utility. Mr. Malcolm E. Campbell has been transferred to Washington and will direct the Cooperative spinning work of the regional laboratories at Clemson, S.C., and at College Station, Tex.

Dr. G. W. Hedlund, Extension Economist at Cornell University, and Dr. J. R. Raeburn of Fife, Scotland, who just completed his doctorate at Cornell, are now teaching in the University of Nanking in China. Dr. Hedlund will remain there one year during which time he will teach Farm Management, Cooperative Marketing, and Business Administration. Dr. Raeburn will remain two years and teach and do research in Prices and Statistics. Dr. A. B. Lewis who received his Ph.D. at Cornell in 1933 has returned to the United States after three years at Nanking. Mr. Ogden King has also returned to the United States after teaching two years at Nanking.

The California College of Agriculture is sponsoring a cooperative conference to be held in conjunction with the annual meeting of stockholders of the Berkeley Bank for Cooperatives. The conference will be divided into two sections; the first to be held at Berkeley on October 29 and 30, the second at Riverside on November 5 and 6. The main papers will be: (1) Problems of Plant Operating Efficiency, by J. M. Tinley, Giannini Foundation, (2) The Relation of Mass Buying to Mass Selling, by H. E. Erdman, Giannini Foundation, (3) Taxation Problems of Cooperative Associations, by Richard Young, Counsel, Farm Credit Administration.

In addition to the main papers, three group sessions will be held at Berkeley for dairy cooperatives, cooperative wineries and deciduous fruit associations. In Riverside group round tables will deal with problems of citrus fruit associations, walnut associations, and mutual water companies.

The following were appointed assistants in the Department of Agricultural Economics of the University of Wisconsin for the academic year 1936-1937: Warren Bailey (M.S., South Dakota State College); Burton Baker (B.S., Leland Stanford University); John A. Baker (B.S., University of Arkansas); A. C. Bunce (M.S., University of Wisconsin); A. W. Colebank (B.S., University of Tennessee); Elmo Elke (B.S., University of Wisconsin); H. E. Larzelere (M.S., Ohio State University); A. N. Nybroten (B.S., Platteville, Wisconsin, State Teachers College); K. H. Parsons (B.S., Butler University). Mr. Parsons had for sometime been a member of the staff of the Resettlement Administration with headquarters at Washington, D.C.

The following graduate students in Agricultural Economics at the University of Wisconsin were granted fellowships by that institution for the academic year 1936-1937: William Musbach (B.S., William & Mary College); O. A. Parsons (B.S., Butler University); Carl Clark (M.S., Oklahoma A. & M. College).

Graduate student assistants, who have been added to the Agricultural Economics staff at the University of Illinois, and the institutions at which they received their undergraduate training include: Kenneth L. Bachman, Oklahoma A. & M. College; Dee A. Broadbent, Utah Agricultural College; David A. Burgoyne, Utah Agricultural College; John L. Liles, Alabama Polytechnic Institute; Paul S. McComas, Kentucky Agricultural College; Charles R. Sayre, University of Illinois; John W. Green, Purdue University.

New graduate students at Cornell University this fall, in the Department of Agricultural Economics and Farm Management, include: Kenneth R. Bennett, B.S. University of Illinois, 1936; Paul L. Poirot, B.S. University of Illinois, 1936; Ralph G. Roop, B.S. Virginia Polytechnic Institute, 1936; Eva Nowicka, Engineer of Horticulture, Warsaw, Poland; Robert E. L. Greene, Assistant in Farm Management Research, North Carolina College; Roberto Huyke, Assistant in Agricultural Economics at the University of Puerto Rico; Herman I. Miller, M.A. 1936, Extension Economist in Farm Management, Nebraska; James D. Toy, B.S. University of Kentucky, 1936. New students in Agricultural Economics at Cornell University this fall include four from China; Mr. Swen from the National Central University, and Messrs Wang, Liu, and Yiek from the University of Nanking.

After a year's leave of absence, P. F. Aylesworth resigned his position as research assistant in Farm Management at the Michigan State College to continue his work in Washington, D.C. in the Farm Management Section of the Resettlement Administration.

Dr. M. C. Bond, Extension Professor in Marketing at Cornell University, worked at Washington in the Extension Service during the summer months. This fall and winter Dr. Bond will spend his sabbatic leave in Puerto Rico where he will be in charge of the Division of Agricultural Economics at the University. He is filling the position left vacant by Professor J. L. E. McCord of Pennsylvania State College.

Mr. Alfred A. Brown has been appointed Assistant Research Professor, Department of Agricultural Economics and Farm Management, Massachusetts State College.

Mr. Pao Chuan Chao has completed the requirements for a Ph.D. at Cornell University and has returned to Nanking where he will be employed by the Central Political Institute. Before attending Cornell, Mr. Chao obtained a B.S. degree at the University of Missouri.

Mr. Marion Clawson, Bureau of Agricultural Economics, is at Harvard University, Cambridge, Massachusetts for a year of graduate study in economics.

Mr. S. L. Clement was appointed Associate Agricultural Economist at the University of North Carolina in January, 1936. Mr. Clement is devoting his time to teaching courses in marketing and to a study of Marketing Tobacco in North Carolina.

Mr. Frederic Coffey, formerly at New Mexico State College, who did graduate work at Cornell University last year, has taken a position with the Resettlement Administration at Amarillo, Texas.

Mr. John C. Doneth who received his B.S. degree from the Michigan State College in 1933, has recently been appointed as an extension specialist in Farm Management at the Michigan State College. Previous to Mr. Doneth's present appointment, he taught agriculture in the Woodland, Michigan, vocational agriculture school.

Mr. Phil S. Eckert, who received his M.S. degree from Ohio State University in August, has accepted a position as instructor in the Department of Economics and Sociology and assistant in Agricultural Economics in the Experiment Station at Montana State College.

Mr. Everett E. Edwards, Bureau of Agricultural Economics, gave a graduate course in American Historiography and Bibliography during the summer at Catholic University, Washington, D.C.

Mr. J. William Fanning, Associate Professor of Farm Management, Department of Rural Organization and Marketing, University of Georgia, resigned to accept a position with the Georgia Extension Service.

Mr. R. K. Froker, Associate Professor of Agricultural Economics in the University of Wisconsin, attended the summer session of the University of Minnesota during the last summer.

Mr. R. E. L. Greene, Assistant Professor of Farm Management, University of North Carolina has been granted a leave of absence for one semester and will continue graduate study at Cornell University.

Dr. C. Horace Hamilton, Professor of Rural Sociology, University of North Carolina, has resigned, effective July 1936, and has accepted a position as Economist in Rural Life Problems, A. & M. College, Texas.

Professor C. H. Hammar has returned to the Agricultural Economics Department of the University of Missouri after spending a year teaching Agricultural Credit and Land Economics at Cornell University.

Dr. V. B. Hart, Extension of Farm Management at Cornell University, is on leave while assuming the duties of Executive Field Officer of the Agricultural Conservation Program in New York State. Dr. G. B. Robinson, who recently completed his graduate work at Cornell, is assisting Dr. Hart as one of the district supervisors for the Conservation Program.

Dr. A. F. Hinrichs of the Department of Farm Management and Rural Economics, Purdue University was granted a leave of absence from June 15 to February 1, 1937 to take charge of one of the Divisions of the WPA Research Study on Trends of Unemployment.

Dr. John A. Hopkins, Associate Professor of Agricultural Economics, in charge of farm management teaching and research work, Iowa State College has been granted a leave of absence for a year in order to take charge of a national works program project to determine the incidence of technological advancements upon the labor requirements of agriculture.

Mr. S. Claude Hudson of the Agricultural Economics Branch, Department of Agriculture, Ottawa, Canada, has undertaken a study of farm credit in Saskatchewan and Ontario. Mr. Hudson has an M.S. degree from Cornell University and is working on his doctorate.

Mr. Virgil Hurlburt, formerly an assistant in the Department of Agricultural Economics of the University of Wisconsin, is now a member of the staff of the Resettlement Administration as State Land Use Planning Specialist of Pennsylvania, with headquarters at State College, Pennsylvania.

Dr. O. B. Jesness, Chief of the Division of Agricultural Economics, University of Minnesota, was recently elected Chairman of the Minnesota State Planning Board.

Mr. Neil W. Johnson, of the Division of Farm Management and Costs, Bureau of Agricultural Economics, is at the Montana Experiment Station, Bozeman, studying types of farming data in Montana, with a view toward working out possible desirable adjustments in farm organization in those farming areas where farm income is considerably below average.

Mr. Jen-ho Liang who recently completed his work for the Master's degree at the University of Minnesota has returned to China.

Mr. David MacFarlane who last year was on the faculty of the University of Manitoba has been appointed a research assistant in Agricultural Economics at the University of Minnesota.

Mr. M. Taylor Matthews has been appointed Associate Professor of Rural Sociology, University of North Carolina, effective July 1, 1936. Professor Matthews will divide his time between research and teaching, and

will participate in the direction of rural research under the auspices of the WPA.

Mr. Ronald A. Mighell has resigned from his position as Assistant Research Professor, Massachusetts State College, and has accepted an appointment as Senior Agricultural Economist in the Bureau of Agricultural Economics, Washington, D.C. During the past year Mr. Mighell was on leave of absence for work as a Land Use Planning Specialist.

Mr. O. L. Mimms has resigned from his position as instructor in the Department of Economics and Sociology, Montana State College, and has accepted a position in the Department of Agricultural Economics at the University of Idaho, Moscow, Idaho.

Mr. W. G. Murray, who has been with the Farm Credit Administration during the past year as director of research, has returned to his position at Iowa State College.

Mr. Kenneth H. Myers has been transferred to Soil Conservation Service for work on economic and rural life studies. Since 1928 Mr. Myers has been engaged in farm management research in the Bureau of Agricultural Economics.

Mr. Delbert C. Myrick, who received his B.S. degree in Agricultural Economics at Montana State College in June, is doing graduate work at Harvard University.

Mr. Jesse T. Palmer, Ph.D. Illinois, 1936, and Mr. Wayne F. Caskey, Ph.D. Illinois, 1936, are with the Dairy Section of the Agricultural Adjustment Administration in Washington.

Mr. Daniel Plastridge, Massachusetts State College, 1935, has been made a graduate assistant in the Department of Agricultural Economics, Massachusetts State College.

Mr. L. S. Robertson, assistant chief in Farm Management at Purdue University, spent the summer at Cornell University doing graduate work in Agricultural Economics.

Mr. Fred J. Rossiter, Bureau of Agricultural Economics, was transferred to Washington recently after having been stationed at the Shanghai, China, office for five and a half years, where he was engaged in gathering information principally on wheat, rice, and soybeans.

Mr. John Sheay, M.S. University of Minnesota, July, 1936 joined the Department of Farm Management and Rural Economics at Purdue University September 14 as Associate in Economics and Marketing Extension. Mr. Sheay after nine years of county agricultural agent work was connected with the Land O'Lakes Cooperative for five years previous to his year of graduate work in 1935-36.

Mr. Beaman Q. Smith, son of Dr. C. B. Smith, Assistant Director of the Extension Service, United States Department of Agriculture, completed the requirements for an M.S. degree at Cornell University this summer and is now an assistant in Agricultural Extension work at the University of California.

Mr. Chester Smith, University of Maine, 1935, has been made a graduate assistant in the Department of Agricultural Economics and Farm Management, Massachusetts State College.

Mr. Roy J. Smith has been appointed as Associate in Agricultural Economics at the University of California. He will teach courses in elementary economics and in Agricultural Economics at Davis.

Mr. Lauren K. Soth, in charge of economic information at Iowa State College, has been granted leave of absence for a year to accept a temporary position in the Division of Economic Information, Bureau of Agricultural Economics, Washington, D.C.

During the summer months Dr. Leland Spencer, Professor of Marketing at Cornell University, conducted a dairy plant survey for the Cooperative Division of Farm Credit Administration. Data were obtained in Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, and Missouri, from plants engaged in shipping sweet cream to northeastern markets.

Mr. George J. Stigler of the University of Chicago has been appointed to the position of Assistant Professor of Economics at Iowa State College. Professor Stigler will offer courses in advanced problems in economic theory.

Howard J. Stover, who for the past five years has been doing price analysis work with the Giannini Foundation of Agricultural Economics at the University of California, has resigned to accept a position with the Farm Foundation in Chicago.

Mr. H. B. Taylor, part-time graduate assistant in Farm Management and Rural Economics at Purdue University has accepted a research position in the Department of Farm Management at Michigan State College effective September 1, 1936.

Mr. R. H. Teal has resigned his position with the Department of Agricultural Economics, University of Illinois, to work with the State Soil Conservation Committee.

Mr. Olin H. Timm who did his undergraduate work at Leland Stanford University, received a Master's degree at Cornell University this summer and is now with the Bureau of Agricultural Economics, United States Department of Agriculture.

Dr. E. D. Tillet, recently an instructor at the University of Maryland, has been appointed Associate Professor of Farm Management in the Department of Rural Organization and Marketing, University of Georgia. Dr. Tillett obtained his collegiate training in farm management at the North Carolina State College and at the University of Maryland .

Mr. Harry Trelogan has been promoted from assistant to instructor in Agricultural Economics, University of Minnesota.

Mr. Stanley W. Voelker, who received his M.S. degree in Agricultural Economics at Montana State College in June, has accepted a position as Assistant Agricultural Economist with the Resettlement Administration. Mr. Voelker will conduct research work in the public finance aspects of agricultural resettlement in Region X.

Mr. Olaf Wakefield has been appointed Assistant in Farm Management at the University of North Carolina and will devote his time to research in problems relating to farm organization and management.

Professor George S. Wehrwein of the Department of Agricultural Economics of the University of Wisconsin was a member of the summer session staff of Iowa State College during the past summer. He taught an elementary course in Land Economics and two special courses dealing with land utilization costs and income and land conservation.

Mr. L. A. Wheeler, in charge of the Foreign Agricultural Service Bureau of Agricultural Economics, was a delegate to the General Assembly of the International Institute of Agriculture at Rome in early October. Previously Mr. Wheeler had visited the offices of the Bureau at Paris, London, Berlin, and Belgrade, and had attended the Conferences of Agricultural Economists at St. Andrews, Scotland.

Mr. Robin M. Williams has been appointed Assistant Professor of Rural Sociology, University of North Carolina. Mr. Williams prior to his appointment had just completed a year's graduate work at Cornell University. He will devote full time to research.

Mr. Dudley E. Young, who received his B.S. degree from Kansas State College is doing graduate work in agricultural economics at Montana State College.

1936 ANNUAL MEETING

The provisional program for the twenty-seventh annual meeting, to be held at the Stevens Hotel in Chicago, December 28-30, 1936, is printed on the following pages. It reflects the result of generous response to requests for criticisms and suggestions on a tentative outline of program possibilities, further discussions and correspondence, and earnest cooperation from several members.

For the *round table conferences* detailed programs will be available later. These are designed to afford opportunities for intimate discussion, of topics in a limited field, by those particularly concerned with that field. Members are invited to drop a postcard to Secretary Asher Hobson before December 1 indicating (1) in which round table they are especially interested, and (2) whether they expect to attend. In some cases, in order to give more time for discussion, copies of round table papers will be circulated in advance to those whose names are thus available.

PRELIMINARY ANNOUNCEMENT PROGRAM OF THE TWENTY-SEVENTH ANNUAL MEETING OF THE AMERICAN FARM ECONOMIC ASSOCIATION

STEVENS HOTEL, CHICAGO
DECEMBER 28-30, 1936

MONDAY, DECEMBER 28

10:15 A.M. *Farm Mortgage Credit*
Chairman: T. P. Cooper, University of Kentucky
(1) "A Consideration of Federal Land Bank Policies"
J. K. Galbraith, Harvard University
(2) "Farm Mortgage Investments of Insurance Companies"
S. F. Westbrook, Aetna Life Insurance Company
(3) "Important Issues in Future FCA Policy"
W. I. Myers, Farm Credit Administration
Discussion: F. F. Hill, Farm Credit Administration
Roy M. Green, Bureau of Agricultural Economics
Nils A. Olsen, Equitable Life Assurance Society

2:30 P.M. (I) *Agricultural Adjustment in the United States in the Nineteenth Century* (Joint session with the Agricultural History Society)
Chairman: H. C. Taylor, Farm Foundation, Chicago

2:30 P.M. (II) *Futures Trading and Its Regulation*
Chairman: C. V. Gregory, Editor Prairie Farmer, Chicago
(1) "Past and Present Theory regarding Futures Trading"
G. W. Hoffman, University of Pennsylvania
(2) "Objectives of Federal Regulation of Commodity Exchanges"
J. M. Mehl, Commodity Exchange Administration
(3) "Essentials of an Effective Futures Market"
A. F. Lindley, Clement Curtis & Co., Chicago
Discussion: Holbrook Working, Food Research Institute
H. S. Irwin, Commodity Exchange Administration, Chicago
L. S. Tenny, Chicago Mercantile Exchange
E. M. Daggit, American Cotton Cooperative Association

2:30 P.M. (III) *Farm Management Problems*
Chairman: Andrew Boss, University of Minnesota
(1) "Interregional Competition and Comparative Advantage in Agriculture"
Sherman E. Johnson, Bureau of Agricultural Economics
(2) "Is It Practical to Plan Farm Operations on Agricultural Forecasts?"
M. L. Mosher, University of Illinois
(3) "What Type of Farm Management—Individual, Professional, Institutional?"
Deane W. Trick, Bankers Life Company
Discussion: I. G. Davis, Connecticut State College
W. E. Grimes, Kansas State College
D. Howard Doane, Doane Agricultural Service, St. Louis

8:00 P.M. *Agricultural Conservation Economics*
Chairman: Frank O. Lowden, Oregon, Illinois
(1) "Agricultural Conservation: An Aspect of Land Utilization"
M. L. Wilson, U. S. Department of Agriculture
(2) "Economic Implications of the Agricultural Conservation Program of the AAA"

F. F. Elliott, Agricultural Adjustment Administration
(3) "An Appraisal of Certain Transitional Developments in the Agricultural Program"
M. R. Benedict, University of California
Discussion: W. C. Lowdermilk, Soil Conservation Service
J. A. Hopkins, Jr., Iowa State College
Beardsley Ruml, National Resources Committee
Alvin S. Johnson, New School for Social Research, New York

TUESDAY, DECEMBER 29

7:30 A.M. *Group Breakfasts*
Cornell Group: S. W. Warren, in charge
Illinois Group: P. E. Johnston, in charge
Minnesota-Harvard Group: W. G. Murray, in charge
Wisconsin Group: Marvin A. Schaars, in charge
N.e.s. Group; H. C. Grant, in charge

10:00 A.M. (I) *Statistical Problems in Sample Enumerations* (Joint session with the American Statistical Association)
Chairman: G. F. Warren, Cornell University
(1) "Considerations in the Selection of Areas for Sample Agricultural Enumerations"
J. B. Shepard and H. H. Schutz, Bureau of Agricultural Economics
(2) "Methods and Problems of Sampling Presented by the Study of Family Expenditures"
Erika H. Schoenberg, National Resources Committee, and Mildred Parten, Bureau of Labor Statistics
Discussion: Alexander Sturges, Bureau of Agricultural Economics
J. I. Falconer, Ohio State University
Z. R. Pettet, Bureau of the Seasons

10:00 A.M. (II) *Recent Foreign Experience in Agricultural Policy*
Chairman: Mordecai Ezekiel, U. S. Department of Agriculture
(1) "Selected Lessons from Canada"
H. C. Grant, University of Manitoba
(2) "Selected Lessons from Great Britain"
L. A. Wheeler, Bureau of Agricultural Economics
(3) "Selected Lessons from Germany"
Karl Brandt, New School for Social Research, New York
(4) "Selected Lessons from the U.S.S.R."
Lazar Volin, Bureau of Agricultural Economics
Discussion: H. G. L. Strange, Searle Grain Company, Winnipeg
Leo Pasvolsky, Brookings Institution

10:00 A.M. (III) *Agricultural Land Tenure*
Chairman: C. C. Taylor, Bureau of Agricultural Economics
(1) "The Place of Land Tenure Research in National Land Policy"
James G. Maddox, Resettlement Administration
(2) "Tenure Problems and Research Needs in the Middle West"
R. W. Schickele, Iowa State College
(3) "Tenure Problems and Research Needs in the South"
Clarence A. Wiley, University of Texas
Discussion: Lowry Nelson, Utah State Agricultural College
O. G. Lloyd, Purdue University
T. Lynn Smith, Louisiana State University

12:30 P.M. Joint Luncheon with Rural Section, American Sociological Society
Chairman: Lowry Nelson, Utah State Agricultural College
"Migratory Farm Labor"
Paul S. Taylor, University of California and Social Security Board

2:30 P.M. (I) *Better Personnel for Statistical and Economic Research in the Federal Government* (Joint session with American Economic and Statistical Associations)
(1) "A Critique of Federal Personnel Policy as Applied to Professional Economic and Statistical Research"
G. Lyle Belsley, Civil Service Assembly of the United States and Canada
(2) "New Opportunities for Economists and Statisticians in Federal Employment"
Leonard D. White, Civil Service Commission
(3) "Government Employment as a Professional Research Career in Economics"
Isador Lubin, Bureau of Labor Statistics

2:30 P.M. (II) *Land Values and Appraisals*
Chairman: E. C. Young, Purdue University
(1) "Some Observations on Land Value Trends"
B. R. Stauber, Bureau of Agricultural Economics
(2) "Appraisal Theory and Practice"
D. Howard Doane, Doane Agricultural Service, St. Louis
(3) "Land Valuation in Germany"
Karl Brandt, New School for Social Research, New York
Discussion: G. S. Wehrwein, University of Wisconsin
Conrad H. Hammar, University of Missouri
P. L. Gaddis, Farm Credit Administration
C. L. Stewart, University of Illinois

2:30 P.M. (III) *Agricultural Economics Extension*
Chairman: C. W. Warburton, Extension Service, U. S. Department of Agriculture
(1) "Using Economic Information in Building an Annual Farm Program"
C. E. Brehm, Director of Extension, Tennessee
(3) "New Developments in Agricultural Economics Extension Work"
H. M. Dixon, Extension Service, U. S. Department of Agriculture
(3) "Planning Adjustments in Farming Systems on a County-wide Basis"
Guy W. Miller, Extension Economist, Ohio
Discussion: F. A. Harper, Extension Economist, New York
L. G. Allbaugh, Extension Economist, Iowa
R. M. Turner, Extension Economist, Washington

6:00 P.M. Dinner Meeting: *The International Conference of Agricultural Economists*
Chairman: G. F. Warren, Cornell University
(1) Reports on the Conference at St. Andrews
(2) Election of American members of the Council

8:00 P.M. ROUND TABLE CONFERENCES
(1) *Farm Management as Related to Conservation Programs*
Chairman: H. C. M. Case, University of Illinois
(2) *Farm Power Problems*
Chairman: J. B. Davidson, Iowa State College
(3) *Milk Marketing Problems*
Chairman: Leland Spencer, Cornell University
(4) *Livestock Production and Marketing*
Chairman: A. F. Vass, University of Wyoming

(5) *Agricultural Cooperation in the South*
Chairman: G. W. Forster, North Carolina State College
(6) *New Developments in Farm Credit*
Chairman: W. G. Murray, Iowa State College
(7) *Farm Taxation and Local Government*
Chairman: M. Slade Kendrick, Cornell University
(8) *Dairy and Poultry Statistics*
Chairman: Joseph A. Becker, Bureau of Agricultural Economics
(9) *Price Analysis*
Chairman: C. F. Sarle, Bureau of Agricultural Economics
(10) *Land Utilization: Economic and Sociological Aspects*
Chairman: Rex E. Willard, Resettlement Administration

WEDNESDAY, DECEMBER 30

9:00 A.M. BUSINESS MEETING

10:00 A.M. (I) *Problems of the South* (Joint session with American Economic Assn.)
Chairman: Broadus Mitchell, Johns Hopkins University

(1) "The Future of Cotton"
Claude T. Murchison, Cotton-Textile Institute
(2) "Possibilities of Agrarian Reorganization"
Calvin B. Hoover, Duke University
(3) "Industrial Development"
Clarence E. Bonnett, Tulane University
Discussion: Lawrence Myers, Bureau of Agricultural Economics
R. J. Saville, Louisiana State University

10:00 A.M. (II) *Commodity Surplus Diversion Operations*
Chairman: E. G. Nourse, Brookings Institution

(1) "Operating Procedures and Problems under Section 32"
J. W. Tapp and F. R. Wilcox, Agricultural Adjustment Administration
(2) "Basic Questions of Policy"
B. H. Hibbard, University of Wisconsin
Discussion: H. R. Wellman, University of California
John Brandt, Land o' Lakes Creameries, Inc.
E. A. Duddy, University of Chicago

10:00 A.M. (III) *Rural Resettlement and Rehabilitation*
Chairman: O. B. Jesness, University of Minnesota

(1) "Experience under the RA Program in the Lake States"
R. I. Nowell, Resettlement Administration
(2) "An Appraisal of the Resettlement Administration Program"
G. S. Wehrwein, University of Wisconsin
Discussion: J. D. Black, Harvard University, and others

12:30 P.M. ANNUAL LUNCHEON

3:00 P.M. COMMITTEE MEETINGS AND CONFERENCE

(1) Executive Committee
(2) Committee on Research in Marketing (F. V. Waugh, Chairman)
(3) Conference on Definition of Terms in Farm Management

TRANSPORTATION—This year, because of the reductions which have been made in railroad fares, the various passenger associations have announced that there will be no convention rate granted. It is suggested, however, that members planning to attend the meetings inquire at their local ticket office regarding possible round trip or Christmas rates.

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1936 ANNUAL MEETING

THE AMERICAN FARM ECONOMIC ASSOCIATION

CHICAGO, ILLINOIS

DECEMBER 28, 29 AND 30

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Reservations should be made at an early date. The rates at the Stevens Hotel are as follows: Single room, $2.50 and up; double room with double bed, $4.00 and up; double room with twin beds, $5.00 and up.

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